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KINSHIP TERMS AND CROSS-COUSIN MARRIAGE OF THE MONTAGNAIS-NASKAPI[1] AND THE CREE

By A. IRVING HALLOWELL

IN a recent study of the kinship terminologies of the Algonkin-Ottawa-Ojibway I attempted to show that the use of certain terms was only intelligible as a reflection of cross-cousin marriage.[2] Owing to the absence, at the time, of direct ethnographic or historic evidence, except in the case of the Ojibway,[3] and the fact that in many cases the terms used at the present day showed fewer significant equations than did the manuscript vocabularies of the seventeenth and eighteenth centuries, the conclusion was drawn that cross-cousin marriage had been formerly practiced among these peoples, but had become obsolete.

In October 1928, shortly after Dr. W. D. Strong's return from Labrador, I learned from him that he had discovered the practice of cross-cousin marriage among the Barren Ground band of the Naskapi and that this fact was clearly reflected in their kinship terms. The partial publication of his data[4] makes it possible to institute a more satisfactory comparison of the vocabularies of the Cree-Montagnais linguistic division in order to determine the extent to which cross-cousin marriage is actually reflected in the kinship terms of these dialects. Rivers,[5] it is true, on the basis of Morgan's schedules, drew attention to the marital implications of the Cree terms, and later Michelson[6] incidentally referred to the fact that Lacombe's vocabularies favored an inference of cross-cousin marriage. Despite Rivers' sociological bias he frankly stated that in this case the data lacked "the completeness which would allow us to make the inference [of cross-cousin

[1] I prefer to use this hyphenated term since Montagnais, in the conventional sense, is scarcely broad enough and because there is, as yet, no definitive study available of the dialectical subdivisions of the Labrador Indians. A comprehensive term is desirable which may be used to include all the Algonkian speaking peoples of the peninsula.

[2] Was Cross-Cousin Marriage practiced by the North-Central Algonkian? Summary read at the 23rd International Congress of Americanists (Sept. 1928), New York.

[3] For whom two independent observations by explorers were cited.

[4] Cross-Cousin Marriage and the Culture of the Northeastern Algonkian. AA, 31:277–288, 1929.

[5] Kinship and Social Organization, 50–51, 1914.

[6] Notes on Fox Mortuary Customs and Beliefs. BAE-R, 40:376, 1925.

marriage] with confidence" and Michelson remarked, "It would be interesting to know whether among both of them [i.e., Cree and Ojibway] cross-cousin marriage actually takes place." Neither of these scholars, however, undertook a detailed comparative study of Montagnais-Naskapi or Cree terms as a whole, a task which, in the light of Strong's discovery, seems more profitable now than heretofore.

In the present paper I have attempted to summarize all of the evidence for cross-cousin marriage which may be inferred from the linguistic data available in both published and unpublished vocabularies of the Cree-Montagnais-Naskapi dialects. For the Montagnais-Naskapi division, in addition to Strong's data, Speck has published a list of terms obtained at Escoumains[7] and he has allowed me to use unpublished data obtained at Lake St. John and for the Mistassini. Lemoine's "Dictionnaire" has also been utilized.[8] Of even greater importance, however, are two manuscript dictionaries of the seventeenth century, one of them written by Père Bonaventure Favre, the other by Antoine Silvy, both Jesuit missionaries to the Montagnais.

Of Favre (Fabre, Faure, Lefebre) very little is known. He was born in 1655, came to Canada in 1688, and died at Quebec 1700.[9] The dictionary attributed to him appears to be the only work of this nature which he wrote and apparently the extant manuscript is a copy, made at Tadoussac (1695–96) of the original document,[10] no trace of which exists. There seems to be no doubt whatsoever as to its authenticity as a seventeenth century document, or to its attribution. That it is in the Montagnais language likewise seems certain. But whether Father Favre was attached to the Tadoussac Mission or elsewhere, I have been unable to discover. The determination of this fact would require an independent investigation, as would the assignment of the language represented in the dictionary to a specific local or dialectical group.[11] While the facts which such studies might reveal would

[7] Kinship Terms and the Family Band among the Northeastern Algonkian. AA, v. 20, 1918.

[8] Dictionnaire Français-Montagnais. Boston, 1901.

[9] Melançon, Liste des Missionnaires-Jesuites Nouvelle-France et Louisiane, 1611–1800, Montreal 1929. Cf. R. G. Thwaites, The Jesuit Relations, etc. (Cleveland, 1896); and R. Streit, Bibliotheca Missionum—1916-1928, for slightly variant dates.

[10] See J. C. Pilling, Bibliography of the Algonquin Languages (Wash.. .ton, 1891), where a statement to this effect in the manuscript itself is quoted in full.

[11] When I examined this manuscript in Quebec I had a limited time at my disposal and since the arrangement of the dictionary is Montagnais-French, I found it necessary to devote myself entirely to the collection of kinship terms and not to dialectical analysis. Professor Speck has not seen the manuscript and from the terms and a short vocabulary I showed him is unable to state which local dialect is represented.

be of fundamental importance in relation to the question we have set out to investigate, the use of the kinship terms themselves in a comparative way is not invalidated.

Father Silvy is much better known. He was born in 1635, arrived in Canada 1673,[12] and, after spending several years with Allouez in Wisconsin at the Mission of Saint Frances Xavier, was ordered to Tadoussac (1678).[13] He left there a year later, however, to minister to the Montagnais on the other side of the height of land in the region of Hudson's bay. Pilling, quoting Sasseville and Shea,[14] assigns the composition of the dictionary to the years between 1678 and 1688. After participating as chaplain in d'Iberville's abortive attempt to win the Hudson's bay region from the English, Silvy spent several years in Montreal and Quebec, returned to France in 1707, but died in Quebec, 1711.[15]

As in the case of Favre's manuscript, the exact dialectal affiliation of the language represented has not been determined but, in Professor Speck's opinion, it appears to be fairly close to modern Mistassini.

Another important Montagnais dictionary of the early eighteenth century, written by Father Pierre Laure, has unfortunately disappeared.[16] It was almost certainly compiled at Chicoutami and we even know the name of the Montagnais woman who instructed Father Laure, so that the locale of the dialect which it represents is in this case indisputable. Since another important manuscript of this well known missionary turned up a few years ago,[17] perhaps it is not too sanguine to hope that his dictionary may some day reappear.

For the Cree, the most satisfactory vocabularies for comparative pur-

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[12] Melançon, *op. cit.*, and Thwaites, *op. cit.*, 59:306, give this date. Streit and Pilling, *op. cit.*, give 1671.

[13] Cf. Thwaites, *op. cit.*, and J. J. Campbell, Pioneer Priests of North America (1642–1710), p. 201 (New York), 1911.

[14] Notes on the two Jesuit manuscripts belonging to the estate of the late Hon. John Neilson (privately printed, New York, 1881). The dictionary is now in the government archives, Ottawa, Canada.

[15] See Campbell for an account of Silvy's part in the d'Iberville expedition, and Pilling.

[16] See Campbell, 234. Pilling states that the "Quebec Historical Society, in its *Transactions*, 3: 406, acknowledges the presentation of a Dictionary of the Montagnais language by P. Laure, 1726." I verified this fact in Quebec and found that it was presented by A. Stuart and listed in the Donations from December 27, 1830–October 31, 1837. There was no reference to it in their catalogue, however, but since the documents belonging to the society were being transferred to the government archives when I was there (January 1927) I consulted Pierre-Georges Roy, Archivist of the Province, but he could find no record of the document either.

[17] See Campbell, 218.

poses are those of L. H. Morgan[18] and A. Lacombe,[19] but I have also examined the lexical material published by E. Chappell,[20] W. H. Keating[21] A. Mackenzie,[22] D. W. Harmon[23] and the manuscript vocabulary of T. Bowery.[24] I have not been able to see the large manuscript dictionary of Père V. T. Végréville.[25]

The general plan adopted in the presentation of the concrete material which follows closely parallels my paper in the Proceedings of the 23rd International Congress of Americanists. The present paper is really a sequel to that study and should be read in conjunction with it. In both cases I have used the linguistic equations one would theoretically expect to find associated with cross-cousin marriage as major headings. Under these appear the two chief subdivisions of the linguistic division under discussion: (a) Montagnais-Naskapi, (b) Cree. I have chosen to take Strong's data from the Barren Ground band as the starting-point in each division since we have the most satisfactory evidence in this case for the coexistence of the cross-cousin terminology and the custom itself. Following the Cree data I have briefly called attention in most cases to the correspondences in Algonkin-Ottawa-Ojibway, since a great many cognate terms occur in this division as well as a similar pattern of usage, thus linking this group with the Cree-Montagnais-Naskapi and lending support to our general thesis. Under each subdivision I have also given both the positive and negative cases where the equations occur, together with the lexical variations within the geographical and temporal limits of the data available for the linguistic group under discussion. In addition I have attempted a chronological interpretation of certain lexical and pattern changes insofar as this may be inferred from comparative data and actual documentary evidence. This procedure may seem rather tenuous at times, but I am convinced that a merely static consideration of the material leads us nowhere. It is scarcely possible that the kinship systems of these Algonkian peoples have remained stable despite the radical changes which have taken place in other departments of their culture. The documentary sources, together with the strong

[18] Systems of Consanguinity and Affinity of the Human Family. SI-CK, v. 17, 1871.

[19] Dictionnaire de la Langue des Cris, 1874.

[20] Narrative of a Voyage to Hudson's Bay, 268–269 (London), 1817.

[21] Narrative of an Expedition to the Source of St. Peter's River, Lake Winnepeek, Lake of the Woods, 2 vols., Philadelphia, 1824.

[22] Voyages from Montreal . . . . . through the continent of North America, New York, 1802.

[23] A Journal of Voyages and Travels in the Interior of North America, 1820.

[24] A Dictionary of the Hudson's Bay Indian Language. See Pilling, *op. cit.*

[25] Pilling, *op. cit.*

probability that cross-cousin marriage was once practiced much more widely than now, aid us materially in reconstructing the character of these changes. Without adopting the hypothesis that some significant changes have occurred, say in the last three centuries, even aside from the question of cross-cousin marriage, the kinship systems of the present day not only appear contradictory but they are completely unintelligible historically. While the incompleteness of the evidence leaves many points unsettled it seems possible to demonstrate a number of consistent trends and specific changes which no longer stand forth as arbitrary and isolated phenomena, if we take into account the fact that these lexical shiftings and substitutions followed in the wake of more fundamental sociological changes which the impact with exponents of European culture brought about. The differential effects of such contacts upon the native culture of the Algonkin hunters is obviously a matter regarding which *a priori* hypotheses are useless but many contemporary variations of native culture may be partly a result of this process. Our only recourse is to study the contemporary facts and interpret them in terms of their most probable antecedents.

1. WOMAN'S SISTER-IN-LAW = WOMAN'S FEMALE CROSS-COUSIN

(*a*) *Montagnais-Naskapi.*—The term nūwitci·wāgin is used for individuals in both of the above relationships by the Barren Ground people. In addition, however, it is probably used more frequently for mother's sister's daughter than nimis.[26] As we shall see, its usage is markedly different in this respect from the equivalent term used by men. A still more extended usage is for a husband's female parallel and cross-cousins.[27]

So far as I know, this vocable does not appear elsewhere as a Cree-Montagnais relationship term,[28] except in the neighboring Davis Inlet band where it connotes woman's sister-in-law and mother's brother's daughter but not father's sister's daughter.[29] For the latter relationship nimis is

[26] In his article Strong gives this last term in his word list but calls attention to the synonymous use of nūwitci·wāgin in a footnote. In correspondence he has stated the opinion that nūtwici·wāgin is more correct for mother's sister's daughter. This usage may represent the beginning of a tendency to ignore this distinction between parallel and cross cousins.

It may be noted here that in the orthography of native terms we have followed the sources employed.

[27] Letter, W. D. Strong.

[28] It is not impossible that this word occurs in the manuscript dictionaries either as a kinship term or with the connotation later discussed, but I did not have it in mind when I examined them.

[29] In Strong's list (p. 281) nimis is incorrectly given for "female cross-cousin." The correct usage appears on p. 280.

conventional. Otherwise the use of nūwitci·wāgin conforms with that of the Barren Ground people.

Personally, I am inclined to believe that the rather puzzling usage of nūwitci·wāgin may be partly explained by the hypothesis that it was not originally an item of the kinship vocabulary of these two bands. It may be a fairly recent accretion which has not become fully integrated. This is suggested by the fact that outside of these groups the word is solely used to connote "my friend, associate or comrade."[30] At Lake St. John nαwi'tcα-wágαn[31] is employed in this way and Harmon,[32] Mackenzie,[33] and Lacombe[34] give the same connotation for it in their Cree vocabularies. In the Algonkin-Ojibway languages it also has a similar meaning[35] but, again, does not appear as a relationship term. A further, more specific, usage of this word is of interest. Baraga includes widjiwagan among the words one may use for "wife" and says that niwish, although seldom employed, may also be used. For the Algonkin Cuoq also gives this latter word for the same relationship, stating that it is "en style familier."

From the point of view of these comparative data, which undoubtedly could be more widely extended, it seems to me that the use of nūwitciwāgin as a kinship term for woman's cross-cousin, woman's sister-in-law, and other relatives is an intelligible development closely related to the etymology of the stem. But, owing to the fact that its usage as a kinship term by the northern Labrador bands mentioned is unique, whereas most of the other terms they employ have cognates in related Algonkin tongues, it seems more likely that the term in question is a recent addition to the kinship vocabulary rather than an ancient term which has disappeared elsewhere and survived in northern Labrador. Despite the fact that genuine cognates of nαwi'tcαwágαn do not appear in other dialects of the Cree-Montagnais or Algonkin-Ojibway linguistic groups it is significant that terms which are its semantic equivalent are applied to woman's sister-in-law and sometimes cross-cousin.

In Old Montagnais there is another term, nikan, which is said to connote woman's sister-in-law,[36] and in the same document it appears as "mon amy."

[30] Strong writes me that the only meaning he was able to elicit for nūwitciwāgin was "someone who lives with you," a rendering entirely consistent with its usage among other Algonkian peoples and probably fairly close to its real etymology.

[31] Manuscript vocabulary, F. G. Speck.

[32] e-wich-i-wa-gun, my friend.

[33] ne-wechi-wagan, my companion.

[34] ni witziwagan, mon ami.

[35] ni-wit-chi-wagan, my companion (Mackenzie); widjiwagan, compagne (Cuoq); widji-wagan, comrade, companion (Baraga).

[36] Favre, "ma belle soeur dit la femme."

Lemoine also reports it as one of two terms for sister-in-law without indicating the sex of the speaker.[37] There is no hint that it was ever used for woman's cross-cousin. The same term, in a diminutive form (ni-kánic), is reported by Strong for three-step siblings-in-law[38] in the Barren Ground and Davis Inlet bands. In the former group it is also employed for wife's father's sister's son, i.e., wife's cross-cousin, a usage which is analogous to nɑ̄wi'tcɑ̄wágɑ̄n for husband's cross-cousin in the Barren Ground band. The lack of comparative data on terms for three-step siblings-in-law or other remote non-consanguineous relatives in Montagnais and Cree bands[39] does not permit any satisfactory conclusions concerning the relative antiquity of terms or their connection with social customs. It is possible that, since we find nikan actually recorded in the seventeenth century, it may have been used for certain two-step siblings-in-law at that time, as well as for more remotely related individuals of this class. That traces of this earlier practice are still to be found is illustrated by Lemoine's record as well as by Speck's report that at Escoumains nikan was being used for woman's sister's husband. However, these cases and the others cited above fail to support the idea that this term was originally one used exclusively between women. In fact, Dr. Speck tells me that at Lake St. John today nikan is a word used by men, meaning "brother" in the sense of friend or companion.[40] It is possible that Favre had the same meaning in mind when he reported one use of nikan as simply "my friend." And it may be remarked that Thavenet, after commenting upon the Algonkin usage, says, "Les Sauteux disent *nikan* mon frère," although I have not been able to discover this usage in any Cree vocabularies. At any rate, the usage of nikanis in Algonkin-Ottawa and Ojibway in the sense of friend, companion, or even blood brother, receives ample support from the older manuscripts extant, as well as from the later published records and information reported by investigators of the contemporary dialects.[41]

[37] The other term is nĭtŭm which is used between men and women, as we shall see later.

[38] I.e., wife's brother's wife, husband's sister's husband, wife's sister's husband, husband's brother's wife. See E. W. Gifford, Californian Kinship Terminologies (UC-PAAE, 18:190.)

[39] Morgan does not include Cree terms for these relationships, although he has collected data from other tribes.

[40] Cf. Lemoine where mes frères (en s'adressant à un auditoire) = nikanishtuk.

[41] See previously mentioned paper for bibliographical details. In Algonkin manuscripts 1 and 2 nikanis is given as a general term for brother in addition to special terms for older and younger brother; Thavenet, Cuoq, and Lemoine indicate a similar usage, emphasizing a male speaker, while André gives "mon cousin germain." At Maniwaki Speck reports its use as "brother," and at Golden Lake Johnson found it used for "younger brother."

Ottawa: André and Jaunay give it aṣ "brother," the former as "cousin germain" also, in addition to other terms for younger and older brother, the latter as "mon camarade" in

The extreme variability in usage that we find in the Montagnais-Naskapi group may be partly explained by the fact that nikanish is included among the words given by Lemoine for "mon (ma) parent,"[42] and Strong derived a similar impression of its meaning in the course of his inquiries.[43] If some such etymology as this is correct, the more or less specialized usage for certain non-consanguineous relatives is intelligible in the case of the Montagnais-Naskapi, as is also its usage among other Algonkian speakers.

So far as a specialized term for woman's sister-in-law is concerned, including perhaps cross-cousin, it is even possible that the Montagnais-Naskapi originally had a term cognate with the Cree form we shall now discuss, although it has not been reported.

(*b*) *Cree.*—Morgan's vocabularies evidence the equivalence of the terms for woman's sister-in-law and cross-cousin. (n′-jä′-koase, 37, 38; n′-dä′-koase, 39). Lacombe gives n′t′âkkus for the former relationship only. These are cognate with Algonkin-Ottawa-Ojibway, ni·dáŋg, ni·dáŋgwe (woman's sister-in-law) and with the composite form of this term (ndaŋ g^{w}c,ɛ·, ndáŋ g^{w}ce) which in these languages is applied to woman's female cross-cousin. The stem appears to be distinct from that found in either of the two terms used by the Montagnais-Naskapi. As we attempted to show in a previous paper, it is reducible to an element which conveys the idea of close friend or companion.[44]

Thus, while there is a radical disparity in the terms employed when we compare different groups, the semantic parallelism is striking, as is the extension of the sister-in-law term to female cross-cousins in northern Labrador, in certain Cree groups, and in the case of the Algonkin-Ottawa-Ojibway. In the cases where the latter practice does not occur, the term used for sister-in-law is restricted to that relationship alone[45] and either sibling terms or their derivatives are used for woman's cross-cousin, typically the term for older sister (woman speaking) or, according to Speck (Escoumains)," descriptive explanatory terms" are employed.

Of the three methods of designating woman's cross-cousin the Escoumain practice is unique not only in the region under discussion but among

addition. In Morgan's vocabulary it appears as step-brother or parallel cousin, man speaking; and Blackbird gives it as "brother."

Ojibway: Morgan's vocabularies exhibit the same usage as in Ottawa; Baraga gives "my friend, my brother (in friendship)"; similarly Jones, who does not include it as a genuine kinship term, nor does Radin. At Depot Harbor, Johnson reports it as brother or friend.

[42] Lemoine, 193.

[43] Correspondence.

[44] *Op. cit.*, ICA, 23.

[45] Davis Inlet band excepted. See Strong, 280.

Algonkians elsewhere, and I should judge it to be a recent phenomenon. The extension of sibling terms to individuals in the cross-cousin relationship, judging from the similar changes in cousin terminology which have occurred elsewhere in eastern Algonkian languages,[46] I also would interpret as due to modern readjustments in the kinship vocabulary. Consequently, it would appear that the remaining method, the grouping of female cross-cousins with sisters-in-law (w.s.), probably represents the most ancient pattern known to us. If this be so, the Barren Ground band preserves the most conservative usage irrespective of whether nūwitci·wāgin represents a relatively new lexical innovation or not.

2. Man's Brother-in-law = Man's Male Cross-cousin

(*a*) *Montagnais-Naskapi.*—In the Barren Ground band ni·stau[47] is the term employed by a man for wife's brother, sister's husband, and male cross-cousin. In the Favre manuscript nichtau is also explained as denoting "beau-frère" and "c8sin." This last connotation is indefinite, but the sex of the relative referred to is clear (thanks to French morphology) and, in view of the fact that under old native conditions parallel cousins were undoubtedly called by sibling terms in all of the languages under discussion, "cousin" can only be reasonably interpreted as male cross-cousin. The sex of the speaker can hardly be questioned either, since the term is one which is only employed by males in these dialects.

Aside from these two cases, the one representing a contemporary, but isolated, Naskapi band and the other a seventeenth century Montagnais dialect, the connotation of ni·stáu is confined to man's brother-in-law. In these latter instances male cross-cousins (m.s.), like parallel cousins, are designated by the term for older brother (m. or w. sp.). Thus, in the Davis Inlet band, nistic is used for older brother, male parallel cousin and cross-cousin (m. or w. sp.) in contrast with the Barren Ground usage where the same term is only applicable to individuals in the first two relationships mentioned. Speck (Escoumains) gives nɑstɑc as the term for older brother and with the suffix-qa'wɑn it is used for older male cousins, both parallel and cross. No other terms for male cousin appear in his vocabularies. Lemoine gives an identical usage of terms.

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[46] Cf. Recent Changes in the Kinship Vocabulary of the St. Francis Abenaki (ICA, 22) and *op. cit.*, ICA 23.

[47] Strong records this term in the second person (tsitau) instead of the first. I give it here in the latter form since all of the other terms are given in the first person. In Speck and Lemoine -c- = -s- in Strong's rendering. Favre also appears to intend a prepalatal unvoiced sibilant.

(*b*) *Cree.*—In the kinship vocabularies of Morgan[48] and Lacombe,[49] as well as in those of Chappell,[50] Harmon,[51] and Mackenzie,[52] the same term is given for man's brother-in-law as in Montagnais-Naskapi, but there is no record of its use in the sense of cousin. Morgan, indeed, is the only one who gives any terms at all for cousin (man speaking)[53] and consequently evidence which indicates that the equation under discussion did not occur. This fact is curious in view of the other equations found in various Cree dialects, but it must be borne in mind that all of Morgan's schedules are relatively late and were not collected from the most isolated groups.

Apparently no other term for man's brother-in-law occurs in any Cree-Montagnais language, and the only cases known where this term is employed for any other relative have been referred to at the beginning of this section. This fact would appear to be significant since we know that in one of these instances cross-cousin marriage is actually practiced. The extended usage of the term, therefore, can hardly be dismissed on *a priori* grounds as having no connection with this form of preferential mating.

In Ojibway-Ottawa-Algonkin, nita is the cognate of Cree-Montagnais ni·ctau, and in its composite form (ni'táwis) it was used for man's cross-cousin in the seventeenth century in Ottawa and Algonkin and at later periods with the same connotation throughout the north-central dialects.

These languages differ sharply, then, from those of the Cree-Montagnais group, in so far as the equation under discussion is concerned. I also believe they may be regarded as more conservative on this point for the following reasons.

Only two terms (and very simple derivatives) appear to have been used for man's male cross-cousin by Algonkian speakers from the region of the Great Lakes to northern Labrador. One of these is a sibling term, which it is customary to use for parallel cousin also. The other is a brother-in-law term. Now where there is any early documentary evidence at all, such as we have for the Ottawa and Algonkin on the one hand, and the Montagnais on the other, the equivalence of the terms for man's brother-in-law and male cross-cousin is recorded. It is also the characteristic usage of the Barren Ground band, a marginal group in which cross-cousin marriage is actually practiced. Consequently it seems to me that we can reasonably assume that where male cross-cousins are equated with siblings and parallel cousins we have a usage which probably arose after cross-cousin marriage

[48] Neese-tow (37, 38); neesh-tow (39).
[49] n'istaw, "mon beau frère, dira l'homme."
[50] nees-tow, my brother-in-law.
[51] ish-taw, brother-in-law.
[52] nistah, my brother-in-law.
[53] nees-chäs (37, 39), nee-säs' (38), i.e., older brother, m. or w. speaking.

fell into disuse. Terminologically it represents a more recent practice than the equating of man's cross-cousin with brother-in-law.[54]

3. SIBLING-IN-LAW (OF OPPOSITE SEX) = CROSS-COUSIN = SWEETHEART

(*a*) *Montagnais Naskapi.*—In the Barren Ground band ni·tɑmɑc[55] is the term employed between siblings-in-law of opposite sex as well as between male and female cross-cousins, whereas in the Davis Inlet band its use is confined to the sibling-in-law relationship. It is in this latter meaning that Lemoine reports it[56] as does Speck for the Lake St. John band[57] (but not at Escoumains),[58] while a derivative term is similarly employed at Lake Mistassini,[59] and among the Tête de Boule Davidson gives the simpler cognate form[60] as the term for sister-in-law (manuscript) but not brother-in-law.

Thus it is plain that, among the contemporary Montagnais-Naskapi bands, we have a common term for sibling-in-law of opposite sex, but the use of the same term for cross-cousin is unique in the case of the Barren Ground people.

All the more striking, then, is the evidence for a usage similar to that of the Barren Ground band in the manuscript dictionaries of Favre and Silvy. The former not only explains nitim as "le frère de mon mary" and "la soeur de ma femme"[61] but records nitim8s (h)[62] as the term for "ma c8sine item fille de mon oncle." In respect to this last usage the explanation is not so specific as could be desired, but in view of the data from the Barren Ground band and other comparative material it seems reasonable to believe that a cross-cousin was intended. In Silvy's manuscript "frère de mon mari" is the only explanation given for nitim[63] but nitimous(h)[64] receives the same elucidation as Favre gives it.

[54] In a previous paper I have cited the interesting case of the River Desert Indians as an illustration of the tendency of the cousin terminology of the northern Algonkians to undergo radical changes. At present they apply the old term for brother-in-law and male cross-cousin to parallel male cousins, instead of the more usual sibling term.

[55] The stem is obviously -tɑm-; -c = a diminutive suffix.

[56] But without the diminutive ending.

[57] ni·tɑm (manuscript vocabulary).

[58] Where no sibling-in-law terms are given, descriptive terms being the type employed.

[59] ni·tɑmuckàwan; -kàwan, having the signification, "not by blood descent." Cf. Speck, *op. cit.*, 157, note 4.

[60] nitim (manuscript vocabulary).

[61] This term is also given in the third person 8itim8 with the explanation "son beau frère d'une femme," "sa belle soeur d'homme" so that there is no ambiguity whatsoever about its application.

[62] The (h) is in darker ink than the remainder of the entry and evidently has been added at a later period in order to correct the phonetics of the term as originally written.

[63] It is also given in the third person as well.

[64] In this manuscript also *h* has been added to the original entry.

From these manuscripts we can thus draw the conclusion that ni'tαm was the term used in the seventeenth century between siblings-in-law (of opposite sex) and that the same term plus a diminutive suffix was employed for cross-cousin. There is the closest kind of correspondence, therefore, between the usage which Strong records and that which prevailed three centuries ago; the only difference being that in the Barren Ground bands the diminutive form is exclusively used. Elsewhere, in the cases where the term is used for sibling-in-law alone (with the exception of the Davis Inlet band), the form ni'tαm prevails, which again corresponds to the older usage and suggests that it may be the most ancient form.

There is, however, still another meaning of the term to be considered, which is of the utmost importance in connection with the question of cross-cousin marriage. Both Favre and Silvy add the meaning "sweetheart" to those which have already been given for the diminutive form of ni'tαm.[65] So far as the manuscripts are concerned we thus have the equation, sibling-in-law (of opposite sex) = cross-cousin (of opposite sex) = sweetheart. Strong did not obtain a term for "sweetheart" by direct inquiry but informs me that tcitamuc is used in this sense in a myth of the Barren Ground band.[66] Surely no better demonstration is needed of one of the ways in which this word may be properly used, and, incidentally, this fact is a check upon the accuracy with which both Favre and Silvy explained the terms given in their vocabularies. It is also interesting to note that in at least two other Labrador bands, where cross-cousin marriage is not practised (i.e., at Lake St. John and Lake Mistassini),[67] ni'tαmuc and ni'tαmuckàwan, respectively, are the ordinary words employed for "sweetheart" but not for cross-cousin.

In view of this fact, especially in the light of the preceding data, it is difficult to escape the conclusion that this practice is connected historically with an earlier period when cross-cousin marriage prevailed among these tribes and when linguistic and sociological usages were completely in harmony.

(*b*) *Cree.*—In this linguistic group the term for sibling-in-law of opposite sex is the precise cognate of the one which is characteristic of the Montagnais-Naskapi division.[68] And, according to Lacombe, nitimus designates

[65] Silvy gives "ma maitresse" and Favre, in explanation of the term as given in the third person, writes, "son galant, sa maitresse." "Sweetheart" seems the closest English equivalent in view of the seventeenth century usage of the French terms and also because it can be used for either sex.

[66] Otter marries Wolf-girl.

[67] Manuscript data, F. G. Speck. At Lake St. John, Dr. Speck was told that ni'tαmuc (m. sp.) could only be used for a cousin if one expected to marry her.

[68] Morgan, nee-tim; Lacombe nitim. Harmon records e-tim as "sister-in-law," without further explanation.

"ma cousine dira l'homme à la fille du frère de sa mère, et la femme dira de meme au fils du frère de sa mère."[69] Although this statement is not so complete as one might wish, it leaves no doubt as to the relationship of the individuals specified. They are cross-cousins and the use of the diminutive for them parallels the Montagnais manuscript and the usage of the Barren Ground people. In the case of the terms recorded by Morgan's informants, the Lowlands Cree (no. 39) employ a cognate term (neé-ta-moos) and the other bands represented may be said to have followed a similar usage, despite the fact that it becomes ch in Morgan's orthography.[70] A further hint regarding the connection of ne-tim with the cousin relationship is the fact that Chappel gives it as the term for "my cousin-female." Such a brief and ambiguous explanation becomes intelligible in view of the comparative data we have presented.

Unfortunately Lacombe does not give any word for amant, or amante, in his dictionary, and since we have not been able to discover any other source through which we might determine whether the Cree use the sibling-in-law or cross-cousin term for sweetheart, we must leave this usage an open question.

But it would scarcely be a surprise if they did employ it in this sense, since we have already traced the phonetic and semantic equivalents of the term we have been discussing in a closely related, yet distinct, group of Algonkian languages, i.e., Algonkin, Ottawa, and Ojibway.[71] In this division of the Algonkian stock we found that ninɑm[72] was the characteristic term for sibling-in-law of opposite sex and that plus a diminutive or double diminutive it was also employed for cross-cousin and "sweetheart." It was also demonstrated by documentary evidence that these equations went back to the seventeenth century in the case of the Algonkin and Ottawa. In addition we pointed out that although cross-cousin marriage is not practiced by these peoples today and most of them do not use the term in

[69] Lacombe adds the statement that, "pour ce [i.e., cousins] qui est des enfants du frère du père, ils s'appellent frères et soeurs." The children of two sisters are also included in the sibling group. See p. 664.

[70] The terms given are neé-che-moos (no. 39); neé-che-moosh (38) for cross-cousins of opposite sex in each case. Our interpretation is strengthened somewhat by the fact that if a woman is using these terms the wives of the individuals referred to are called sister-in-law which is the same term as that used for woman's female cross-cousin and an analagous usage follows in the case of male speakers. Furthermore, if we do not equate these terms with the diminutive of neé-tum they are completely anomalous in the kinship vocabularies of these groups.

[71] See the writer's paper in the ICA, 23.

[72] The initial n of the stem here = t in Cree-Montagnais. Cf. E. Sapir, The Algonkin Affinity of Yurok and Wiyot Kinship Terms, SAP-J, 15:22, 1923.

question for cross-cousin, yet among the Ojibway it is still the word commonly employed for sweetheart.[72a] This was also found by me to be the case at Lake Nipissing, and although I stated that inquiries about the use of the word ni·ni·mucę caused considerable amusement, I attached no particular significance to this fact. But since Strong has reported a special form of joking relationship between cross-cousins in Labrador[73] this reaction not only becomes intelligible but assumes an ethnographic importance which definitely links up with the interpretation that it seems necessary to place upon the associated facts.

4. Son-in-law = Cross-nephew

(*a*) *Montagnais-Naskapi.*—The discovery that members of the Barren Ground band use n'ti·k^{w}ti·m[74] for both son-in-law and cross-nephew is a very significant fact, since this equation has not been reported elsewhere among Cree-Montagnais speakers. The correlation between the actual practice of cross-cousin marriage and this equation would consequently appear to be a functional one.

Elsewhere this term appears either with the connotation son-in-law (Davis Inlet,[75] Mistassini[76]) or cross-nephew (Silvy, Favre,[77]). Where n'ti·k^{w}ti·m is used for son-in-law the term used for both cross and parallel nephews is ntocim.[78] This latter usage is also characteristic at Lake St. John and Escoumains.[79] It is likewise the only term given for nephew by

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[72a] Since completing this study I had an opportunity to examine the Mississanga (Ojibway) ms. in the Toronto Public Library which Chamberlain utilized (Language of the Mississauga Indians of Skūgog, 1892). On pp. 5 and 12 I found that ninimouchén was the word given for "ma maitresse." Chamberlain did not include this word in his printed vocabularies, so I draw attention to it here, since it substantiates the usage of this vocable at a period of more than a century ago.

[73] *Op. cit.*, see p. 283.

[74] Strong writes this term entiwhitim but I have attempted to correct his orthography. En, e.g., is certainly initial n (the personal pronoun), and wh I belive to be a mishearing and transposition of k^{w}.

[75] Strong, 281.

[76] Speck manuscript, n'tɑkwatɑm.

[77] Silvy, nitik8atim, mon neveu. Also for "ma tante" [sic]. Favre, nitik8a(?), mon nepveu, fils de ma soeur. (The final letters of this term were illegible.) 8tik8atim, son nepveu, fils de sa soeur. While it is plain that Favre is trying to indicate the cross-nephew relationship here (m.s.), Silvy is ambiguous. But since the term in question has never been reported for the parallel nephew relationship I believe we may safely infer what the seventeenth century usage was.

[78] Here again I have substituted n for en in Strong's orthography.

[79] Speck manuscript, nducɑm and, *op. cit.*, ntocɑm.

Lemoine and it appears in the Silvy manuscript with the same ambiguous explanation [80] In the latter case, however, I believe that its proper usage was for parallel nephews because Silvy gives the term nitik8atim for nephew also. It is scarcely likely that these terms were interchangeably used as real synonyms in the seventeenth century, because there is plenty of evidence for the differentiation of nephews in contemporary Algonkian languages, where the aboriginal pattern has been best preserved. And, whereas ntocum is at present reported for both types of nephews, there is not a scrap of evidence to indicate that n'ti·k^{w}ti·m was (or is) ever used for parallel nephews.

So far as we may interpret the foregoing facts historically, I think they indicate that ntocum is undoubtedly a very old Algonkian term for parallel nephew. As we shall see, its widespread use in this sense, far beyond the Labrador region, supports this view. It is likewise significant that its usage for cross-nephew appears to involve an extension of meaning, since in such instances it is always used for parallel nephew as well, while the contrary situation does not seem to exist. It looks very much as if a substitution for some other cross-nephew term had taken place. If this hypothesis is correct, the terminology of the Barren Ground band would represent the only remnant of the aboriginal pattern that has been reported to date. In all the other bands, factors have arisen which have brought about the terminological grouping of parallel and cross-nephews.

In regard to n'ti·k^{w}ti·m, it appears that its usage for cross-nephew is of considerable antiquity, in so far as we may admit the testimony of the documents on the one hand, and its occurrence beyond the Labrador region on the other. Its usage for son-in-law, on the contrary, while entirely compatible with cross-cousin marriage, is complicated by the fact that there is a term for this relative, not reported by Strong or by other Labrador investigators, recorded in the Silvy manuscript. This is the term nin8hagan.[81] It differs from most of the other terms under discussion by reason of its descriptive character. Apparently, it signifies the residence of a son-in-law with his wife's family.[82] This we may infer from Algonkin and Ojibway data on the one hand, and from the usage of a feminine cognate by certain modern Montagnais bands, on the other. Lemoine,[83] for instance, after

[80] nito8chim, mon neveu.

[81] Gendre.

[82] I.e., matrilocal residence after marriage. In almost all of the northern and northeastern Algonkin bands a number of such cases have been reported. Usually the son-in-law inherits his father-in-law's hunting territory in such instances. In view of the more general patrilineal inheritance of property in these bands these exceptions are of considerable sociological interest.

[83] Dictionnaire Francais-Algonquin.

giving the Algonkin equivalent of n'ti·k^{w}ti·m for son-in-law, adds —nahangicim as a synonym and explains it by the phrase, "s'il demeure chez son beau-père." Baraga[84] gives naangish as "the son-in-law in the family,"[85] although niningwan is apparently the ordinary term for son-in-law. Naangab (nin) he explains as "I am son-in-law, or daughter-in-law, in a family, *living* with the family" (italics mine), which suggests the residential idea involved. At Lake St. John and Mistassini, ninɑhagɑnckwem may be used for daughter-in-law and means "a new woman joining (in the residential sense?) the family."[86] This is the form of the nearest modern Montagnais cognate to the term recorded by Silvy. There is, however, another contemporary word for son-in-law which is phonetically cognate with the Cree terms for the same relative and in its semantic content suggests a linkage with the terms discussed above. This is nɑhàtcɑm, probably meaning, "a new man on my hunting ground."[87] It does not appear in the manuscript dictionaries or in Strong's vocabularies.

(*b*) *Cree.*—The terminological grouping of cross-nephew and son-in-law is not to be found in any of the Cree vocabularies to which I have had access. The term for cross-nephew as given by both Morgan[88] and Lacombe[89] is however distinct from that used for parallel-nephew,[90] and is cognate to Montagnais-Naskapi n'ti·k^{w}ti·m. This term also links up with Algonkin-Ottawa and Ojibway, where niniŋgwɑn and its diminutive are used to connote son-in-law and cross-nephew respectively,[91] a remarkable parallel to the Barren Ground usage. Among the Cree, on the other hand, there is a separate term for son-in-law which is plainly cognate with Montagnais nɑhatcɑm.[92]

If we take all the foregoing facts into account, it seems to me that we

[84] A Dictionary of the Otchipwe Language, 2: 260 (Montreal), 1882.

[85] Cuoq and Lemoine likewise give this term as a synonym.

[86] Speck manuscript. Close cognates to this term are also found in Algonquian and Ojibway. See next section.

[87] Lemoine, naatchim; Speck manuscript vocabulary, Lake St. John: nɑhatci·'m = "a new man on my hunting ground"; nɑhat'ci·win, applied to a new territory occupied by a hunter. Here again it will be noted that the meaning given is conditioned by the circumstance that a man has joined the band of his wife's father. Were it not for the older term with a similar implication one might have been led to interpret this practice as a recent innovation.

[88] n'-de-kwä-tim' (37, 38); n'-deh-kwä-tim' (39).

[89] n'tikwatim.

[90] Which is cognate with Montagnais-Naskapi ntocum.

[91] Hallowell, *op. cit.*

[92] Morgan, nä-hak'-sim (37, 38); n'-hä'-ke-shim (39); Lacombe, ni nahâkisim, mon gendre Cree k Montagnais tc before i(ɑ). In Morgan's schedules the same term is said to be used for sister's daughter's husband, and brother's daughter's husband, man or woman speaking.

have a general analogy to those we discussed under the equation: man's brother-in-law equals cross-cousin. Here again the pattern of usage employed by the Barren Ground people is closer to that of the Algonkin-Ottawa-Ojibway than to the Cree pattern. The term for son-in-law in Cree, moreover, is that used by the modern Montagnais. But the Montagnais manuscript material is confusing, since the modern term for son-in-law is not recorded. In its place another, unique, term appears, which is again distinct from the cross-nephew term given. Nevertheless, I believe that an interpretation of these facts in terms of the cross-cousin marriage hypothesis, and the recognition that terminological changes have probably occurred in fairly recent times, will give us some insight into the historical situation.

We may assume, in the first place, that the oldest usage of ntocœm was for parallel-nephew for the reasons previously stated. This holds in both Cree-Montagnais and Algonkin, Ottawa, and Ojibway. Hence, the cases where we find it employed for cross-nephew represent a secondary development, historically speaking. Originally there must have been some other term employed for cross-nephew which ntocœm displaced in these instances. The facts we have at our disposal indicate that n'ti·k^{w}ti·m was so used. It not only appears in the Montagnais documents but also in closely related dialects such as Cree. The further question involved is whether its oldest usage was in this sense or that of son-in-law. If we accept the latter hypothesis, as suggested by the Algonkin-Ottawa-Ojibway material, where the diminutive form is used for cross-nephew and not the reverse,[93] the case looks very simple, for we might argue that cross-cousin marriage was responsible for the extension of the term to cross-nephew. For the north-central Algonkian this is a plausible hypothesis, as it is also for the Davis Inlet and Mistassini bands, where cross-cousin marriage is not practiced, but the term is still used for son-in-law and not cross-nephew. Sapir, however, argues that *-lĕkwa-, *-lekwa-lĕ- is the original Algonkian stem for cross-nephew and implies that the related son-in-law terms are a secondary development, without invoking any sociological hypothesis to account for this fact.[94] When viewed in terms of its wide geographical distribution, as well as the documentary evidence, it does seem that forms of niti'k^{w}tim show a more marked semantic association with cross-nephew than with son-in-law. For the Cree-Montagnais, at least, we know of no older term for cross-nephew.

In regard to the son-in-law terms a significant fact may be noted. Both

[93] See Hallowell, *op. cit.*, where all of the terms applied to blood relatives are diminutives of those which apply to relatives by affinity.

[94] See pp. 22 and 43.

the one given by Silvy and the modern Cree-Montagnais term were shown to be more transparently descriptive in character than most of the other terms in our series. Cognates of Silvy's nin8hagan are likewise used for daughter-in-law in Algonkin and Ojibway as well as old and modern Montagnais. Hence, it will be desirable to review these daughter-in-law and cross-niece terms before attempting to draw any further conclusion.

5. Daughter-in-law = Cross-niece

(*a*) *Montagnais-Naskapi.*—The above equation is only found in the Barren Ground band and in one of the manuscript dictionaries. It does not occur in the vocabularies of any of the other Labrador people about which we have information.

The term Strong obtained[95] was nāginakwim, which, if we prefix the personal pronoun ni- and interpolate the syllable -ha- between nā- and -gin-, becomes the equivalent of ninɑhàgɑnckwem,[96] which Speck found to be the term for daughter-in-law at Lake St. John and Mistassini. These latter people never apply it to the cross-niece, nor is it so used in the Davis Inlet band, where it is also used for daughter-in-law exclusively.[97] That it is an old term is indicated by its occurrence in both seventeenth century manuscripts, Silvy giving it in what amounts to the same form as above[98] and Favre giving it without the feminine suffix.[99] In this latter form it is given by the former missionary as the term for son-in-law, as we have already pointed out. Consequently, we may infer that at this period the same term, sometimes used with the feminine suffix, was employed as a generic term for child-in-law.[100] Its descriptive character, in contrast to most of the other terms of the kinship vocabulary, is a point already touched upon as well as the fact that its etymology harmonizes perfectly with its usage.

In contrast to the Barren Ground usage, at Davis Inlet, Lake St. John, and Mistassini,[101] as well as at Escoumains, the term ntocɑm plus the feminine suffix is used for parallel and cross-niece.[102] This practice is analagous to the use of a single term for parallel and cross-nephew. And here too it

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[95] It does not appear in the article, *op. cit.*

[96] -c- is a diminutive; -kwem is a feminine suffix.

[97] Speck does not give any term for this relative in his Escoumains terminology.

[98] nin8haganisk8e8, ma bru, belle fille.

[99] nin8hagan, ma bru, femme de fils.

[100] A similar statement could be made with regard to its usage in the north-central dialects, *op. cit.*

[101] nducɑmickwem (Speck manuscript).

[102] Lemoine also gives nītūshimishkwem as the only term for niece.

seems to me, we must regard this custom as a secondary historical development which, from the standpoint of what was probably the older form of Cree-Montagnais kinship, indicates a revision of usage, symptomatic of the general reorganization of the relationship system of these groups which has been in progress during the last two centuries or more. In the Escoumains band, e.g., special terms for cross-niece and cross-nephew are lacking; there is no distinct term for daughter-in-law, and cousins are not distinguished from siblings. In the Davis Inlet band, on the other hand, although the simplification in the usage of the terms has not proceeded quite so far and most of the old terms are still extant, the same tendencies appear to be at work.[103]

That there was an older term for cross-niece, distinct from the one which in the Barren Ground band is also employed for daughter-in-law, is attested by Silvy's manuscript and a Cree cognate. This is the term nichtim. It occurs twice in Silvy's vocabulary, once with the simple explanation "ma niece," and again with the following explanation "ma niece, la femme de mon neveu; ma bru, la femme de mon fils". So far as the usage of nichtim for daughter-in-law and (cross) niece is concerned we have plain evidence of an equation which suggests cross-cousin marriage, and, although a different term is employed, indicates the antiquity of the pattern exhibited by the Barren Ground people today. Since we have cognates elsewhere of the same term being used for cross-niece, I think that despite Silvy's ambiguity we can be practically certain that cross-niece is intended. The usage of nichtim in this way is also supported by the fact that in our vocabularies from contemporary Montagnais-Naskapi bands we find the parallel niece term often extended to cross-niece, but not a single case of the reverse process is on record. It would appear that there is a strong resistance involved here to the use of the old term for cross-niece in this manner, whereas the inclusion of the daughter-in-law within the connotation of this term is still a feature of nineteenth century Cree vocabularies.[104]

The application of nichtim to the "wife of my nephew" is more puzzling. The interpretation theoretically consistent with cross-cousin marriage is

[103] From Lake St. John and Mistassini we do not have complete vocabularies. But here again similar tendencies are in evidence in the kinship system.

[104] If it be admitted that Cree-Montagnais st corresponds to ss in other Algonkian dialects, the antiquity of a widespread cognate term for cross-niece receives further support. Sapir, at any rate, has made an exceedingly strong case for Algonkian -*-ssĕm or *-'ssem as the stem for cross-niece. See Sapir, *op. cit.*, 23, 43. It may also be remarked in passing that the term for daughter-in-law in other Algonkian languages is reducible to the same stem. Cf. our discussion of the point in the paper cited.

that a parallel nephew is intended (man or woman speaking). Since a man in all of these languages calls his parallel nieces and nephews by terms which are the equivalent of step-son and daughter, the spouses of these individuals naturally fall into the child-in-law class. Assuming that cross-cousin marriage is also in vogue, it will happen more or less frequently that a man's parallel nephew (step-son) will actually be married to his cross-niece, just as his own son may be, so that on theoretical grounds the terminological equivalence is clear: cross-niece = daughter-in-law = wife of parallel nephew. The wife of a cross-nephew, on the other hand, would be either a man's own daughter or one of his brother's daughters, in which case the logical terms would be "daughter" or "step-daughter," respectively. At the same time we cannot assume that cross-cousin marriage was practiced consistently in every generation to the fullest possible extent. From a practical standpoint the wife of a cross-nephew may not always have been a member of the family group. In such cases nichtim would be most likely the term employed. Consequently I think that Silvy's statement is not only intelligible but also quite correct as a general statement. It is supported by Morgan, who likewise gives the term "daughter-in-law" for sister's son's wife, brother's son's wife (man or woman speaking), which in Cree may also be used for cross-niece.[105] As a parallel usage we have in Morgan's Cree schedules the use of the son-in-law term for sister's daughter's husband and brother's daughter's husband, but this term is distinct from the one used for cross-nephew. Theoretically, this terminology is difficult to reconcile with cross-cousin marriage but it will be recalled that it was only in the Barren Ground band that we found a cross-nephew term being used for son-in-law. If a single term was once used the same explanation we essayed in the case of nichtim would apply here, since the same principle is involved in both usages, i.e., the extension of the child-in-law terms to the spouses of nieces and nephews,[106] primarily those of the parallel class.

(*b*) *Cree.*—In Lacombe's vocabularies, but not in Morgan's, ni nahâkaniskwem is said to signify "ma bru," but it is remarked that n'istim is "plus communement" employed. This latter term is the only one given for

[105] nee-tim (37, 39) nee-stim (38). The former term should contain an s else it becomes indistinguishable from the sibling-in-law term. That this is a case of bad phonetics or a misprint seems likely in view of the fact that all the terms are explained as "daughter-in-law," under which head the orthography is consistent with what one would expect.

[106] The same practice was observed among the north-central Algonkians since in Document 5 (Algonkin) nahanganik is explained as "ma bru v fm. du neveu"; while in Morgan's schedules of the Ojibway and Ottawa nisim and niningwan are employed for the spouses of nieces and nephews. In this group the son-in-law and cross-nephew terms are equivalent but the cross-niece term is nicimis.

daughter-in-law in Morgan's vocabularies,[107] while in Lacombe's list it is the only term which appears for cross-niece. In two of Morgan's schedules the same term is entered for older cross-niece, which tallies with the usage given by Lemoine, except for the emphasis on age differentiation. In these cases the term for younger cross-niece assumes a form cognate with the Algonkin-Ottawa-Ojibway term for cross-niece.[108] In the remaining instance neese-che-mis is the term given. It is possible that these terms represent recent borrowings from the north-central dialects.[109]

Comparing Cree with Montagnais-Naskapi usage we find that in both groups there is evidence for the equating of daughter-in-law with cross-niece. But in respect to the terms used the Barren Ground people are the only ones that employ ninαhagαnckwem for both relationships, although this must be a very old word for daughter-in-law. The Cree, however, employ a term which is cognate with the one recorded in Silvy's manuscript (nichtim).

We may conclude from the foregoing data that:

(1) ninαhagαnckwem is primarily a descriptive term for the daughter-in-law relationship, etymologically connected with a similar term for the son-in-law connection, and originally, perhaps, connoting the idea of residence on the part of a child-in-law of either sex with a spouse's parents. It was not a kinship term in the narrow sense. This is borne out by the occurrence of cognate forms in Algonkin-Ottawa-Ojibway. In usage they are practically identical with those described above but, side by side with them, appears another term for daughter-in-law (nissim) which seems to be a genuine kinship term possibly related to Cree-Montagnais-Naskapi (nistim, nictim). The extended usage of ninαhagαnckwem in the Barren Ground band correlates with cross-cousin marriage there and thus seems to be of sociological significance, especially since in modern bands, where this form of preferential mating is absent, the term is confined to daughter-in-law. Just how it has come about that the Barren Ground people, conservative as they are, have lost the older term for cross-niece I do not know. As the matter stands, they exhibit an old pattern of usage but employ the term in question uniquely.

(2) So far as documentary evidence is available, nictim is the oldest known term for cross-niece. In this respect it parallels n'tikʷti·m for cross-

[107] neese-tim (37); neesh-tim (38, 39).

[108] I.e., Cree, neese-che-mish (37), neeste-che-mis′ (38) Algonquian-Ottawa-Ojibway, ni·cimi·s.

[109] Cf. T. Michelson, Terms of Relationship and Social Organization (Proc. Nat. Acad. Sci., v. 2, 1916) on Cree borrowing from Ojibway.

nephew. The extended usage of the term in old Montagnais is paralleled in modern Cree vocabularies, and it is difficult to believe that originally this practice had no sociological significance. The probable equivalence of this term with nissim in the north-central dialects is also a fact worth noting here. It is striking that, although it was impossible to establish with certainty the general equivalence of terms for cross-niece and daughter-in-law in Algonkin-Ottawa-Ojibway, the usage of nissim is actually explained in this way by André in his Dictionnaire Algonquin. The occurrence of the same term with the same dual usage in old Montagnais, old Algonkin, and modern Cree cannot be dismissed as a mere linguistic coincidence. Although employing a different term but in the same manner, the contemporary Barren Ground people must also be taken into account, and they practice cross-cousin marriage.

(3) The term ntocam, + diminutive + feminine suffix, is primarily a term for parallel niece or, without the suffix, for parallel nephew. The extended usage of this vocable is a relative modern phenomenon indicative of a reorganization in the usage of terms that has occurred as a result of sociological changes. With the decline of cross-cousin marriage the old terms for both cross-niece and cross-nephew were emptied of their sociological content in so far as they no longer served to emphasize the classification of cross-nepotics with children-in-law. Hence the terms for parallel nephew and niece could easily be extended to include cross-nieces and nephews. Simultaneously, we may suppose, coordinate changes were occurring in the designation of parents' siblings, and cousins and children-in-law were set apart as a distinct group. These linguistic reorientations probably varied from band to band both spatially and temporally, which accounts for the marked differences we observe today. In some cases old terms for cross-nieces (or nephews) disappeared altogether, while the old descriptive term for the child-in-law relationship, originally perhaps a synonym, tended more and more to assume the status of a genuine kinship term in certain cases. It served to fill the gap left by the cross-niece and nephew terms which in their extended usage had functioned at an earlier period.

6. MOTHER-IN-LAW = FATHER'S SISTER = MOTHER'S BROTHER'S WIFE

(*a*) *Montagnais-Naskapi.*—In the Barren Ground band, nisokwis serves the triple designation indicated above.[110] The neighboring Davis Inlet peoples restrict the same term to mother-in-law,[111] a practice followed by

[110] The term is also used for father's father's brother's daughter and step-mother (correspondence, W. D. Strong).

[111] A woman may also use noham, i.e., grandmother. The h in this term, as recorded by Strong, corresponds to k in other Cree-Montagnais groups as well as elsewhere. It represents

the modern Montagnais groups for which we have data. Nɑcugwuc is the form used at Lake St. John and Mistassini (Speck), nicoyus[112] at Escoumains (Speck), while Lemoine gives (ni) shikush. In these cases we find that one of two other terms is used for paternal aunt. At Davis Inlet and Lake St. John nduc[113] is the term employed, recorded by Lemoine as nituss. At Escoumains noqumuc is used for both paternal aunt and paternal uncle.[114] Now, although the manuscript dictionaries are not so explicit as one might wish in respect to the usage of the three terms already discussed, comparison with the usage among the Barren Ground people and the Cree reveals an almost exact correspondence. This enables us to reconstruct the aboriginal pattern, represented by the connotations of these terms, with a fair degree of accuracy. The deviations found in the other groups can then be interpreted as due to historically recent changes.

The pertinent data from the manuscripts may be conveniently summarized as follows:

Favre	*Silvy*
(ni) t8sis: tante, belle mère.	nit8sis: ma tante, belle mère.
(ni) sik8sis: tante.	nisigk8sis: ma tante.
(ni)chik8sis: tante, paternelle et maternelle, belle mère.	nichig8sis: ma tante paternelle.
(ni)chig8sis: tante, belle mère.	
(n)8k8mis: mon oncle paternel.	n8k8mis: mon oncle paternel.

The term nit8sis in these documents is the precise equivalent of the Cree term for mother's sister and father's brother's wife.[115] This is likewise the present-day usage of the cognate term ntūc in the Barren Ground band. Consequently it seems fair to infer that the ambiguous terms "tante" and "belle mère," as used by both Favre and Silvy to explain this term, mean maternal aunt and step-mother (father's brother's wife). On this assumption the ancient kinship pattern contained separate terms for maternal aunt and paternal aunt, a fact that harmonizes perfectly with the data from other Algonkian languages, as well as with the more conservative dialects of the immediate linguistic division under discussion. The use of nduc for paternal aunt may thus be viewed as an extension in usage of the term

either a marked dialectical difference, or a mishearing of the sound. The use of this term for mother-in-law is unique.

[113] y = a back palatal spirant.

[112] Strong writes this entuc. His en = n in the other orthographies. The same term is also used for mother's brother's wife in these bands.

[114] Cf. "uncle" term in next section.

[115] Morgan, n'do-sis (37, 38), n'-do-zis (39); Lacombe, n't'osis.

originally confined to mother's sister and probably father's brother's wife. In the cases already referred to, as, e.g., the Davis Inlet band[116] and at Lake St. John, the term is used as well for father's sister and mother's brother's wife. It has become a general term for "aunt" in the English sense. That this wider application is more recent than the restricted one can scarcely be doubted.[117]

In the case of the term nisik8sis or nichig8sis we again encounter the explanation "belle mère" which, by analogy with modern Naskapi, Montagnais, and Cree, is most certainly "mother-in-law." In fact, we find cognates of this term throughout practically the whole Algonkian stock, so that its usage in this sense in the seventeenth century is incontrovertible. Its other connotation, paternal aunt, can scarcely be brought in question either. The Favre manuscript, it is true, is confusing on this point; since the maternal aunt is included,[118] this may represent an extension of usage already in vogue, or a slip. But the widespread usage of cognates of the term for father's sister discounts this exception.

There remains the Escoumains case where noqumuc is employed for paternal aunt. This represents a peculiar turn of affairs since in the manuscripts and elsewhere among the Cree, Montagnais, and Naskapi speakers this is the ordinary term for father's brother. The Escoumains band are unique in that they use it for both relatives. They also have an equivalent term for both mother's sister and mother's brother.[119] This practice is probably a fairly recent one, since there are no indications whatsoever that it represents an aboriginal pattern.[120]

(*b*) *Cree.*—In these dialects the equivalence of the terms for mother-in-law, father's sister, and mother's brother's wife is clearly demonstrated in

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[116] Also for step-mother and father's father's brother's daughter (correspondence, W. D. Strong).

[117] According to Lowie's nomenclature this involves a change from a Bifurcate Collateral to a Lineal type of terminology. See his Note on Relationship Terminologies (AA, 30:263–267, 1928).

[118] But I may say that the explanatory portion of this entry has been tampered with, possibly with the idea of correcting it to paternal aunt.

[119] See next section.

[120] Theoretically, however, it is of great interest; especially since Lowie, in the article referred to, bases his classification upon the logical possibilities involved in the designation of collaterals in the first ascending generation. He gives only four of these, but the case at hand suggests the need of a fifth that might be characterized as the Bifurcate Merging of Collaterals, as distinguished from the ordinary form of Bifurcate Merging where parents are classified with siblings of like sex. It would also be interesting to know whether similar cases have been reported and the conditions under which they have arisen.

Morgan's vocabularies.[121] Lacombe, referring to nisikus as the term for mother-in-law, adds, "pareillement comme pour dire: ma tante paternelle." The term itself is the cognate of the usual Montagnais-Naskapi word for mother-in-law, which in the Barren Ground band and in the Favre manuscript, was also found to be the term for father's sister.

In so far as we can reconstruct the aboriginal Cree-Montagnais-Naskapi pattern from the foregoing facts, it is clear that there was a distinct term for mother's sister and possibly for father's brother's wife (step-mother?),[122] and another one for father's sister. This latter term was also used for mother's brother's wife and mother-in-law. It has continued to be used in this last sense even in groups where the terminological distinction between father's sister and mother's sister has disappeared. The significant fact is that no other distinct term for father's sister seems to have existed in these languages during the period covered by our data. Consequently, terms having some other primary signification have been used for father's sister and mother's brother's wife. I have attempted to distinguish these more recent usages from what appears to be the older pattern. The same situation seems to have existed among the Ottawa, Algonkin, and Ojibway, where a cognate term was used for mother-in-law and father's sister at a former period and still exists among the more conservative groups. In certain other groups there arose the same sort of substitutions observed in the case of the Montagnais-Naskapi. Since the older pattern is the one that suggests cross-cousin marriage, it seems logical to draw the conclusion that the subsequent linguistic changes have followed the decline of this custom among certain Montagnais-Naskapi bands, while among the Cree the old terminology persisted, and in the case of the Barren Ground Naskapi, both the custom and the terminology.

7. FATHER-IN-LAW = MOTHER'S BROTHER = FATHER'S SISTER'S HUSBAND

(*a*) *Montagnais-Naskapi.*—The term nis is conventionally used by the Barren Ground people for all the above relatives. In contrast, the Davis Inlet group only employ it as a father-in-law term.[123] This is likewise the practice in the modern Montagnais dialects for which we have information, although in these cases the term appears with the dental replaced by the prepalatal sibilant and the diminutive suffix added: ni·ci·c, Lake St. John,

[121] nis-sĭ-goó (37), nis-se-go̍ó (38), nĭ-se-goos (39).

[122] The term for father's brother's wife is usually the equivalent of step-mother in most Algonkian languages.

[123] More typically, according to Strong's table, for wife's father than husband's father. Women more frequently use the term námácum, i.e., grandfather. This parallels the use of the usual term "grandmother" for mother-in-law already referred to.

Mistassini (Speck); nαcαc, Escoumains (Speck); (ni)shish (Lemoine). For mother's brother, and father's sister's husband, nōkαmuc is used at Lake St. John, Mistassini, and at Davis Inlet,[124] Lemoine reporting an identical term[125] for "oncle." In the French and English sense this is the actual usage of the term, since it includes father's brother and mother's sister's husband. At Escoumains, on the other hand, ntus is applied to mother's brother and mother's sister. We thus have an exact parallel to the usage of the terms for father's sister and mother's brother's wife described in the previous section. The information contained in the manuscripts and the Cree vocabularies likewise reveal a parallel nomenclature. Favre and Silvy give n8k8mis as the term for paternal uncle and this is the Cree term.[126] The more extensive usage represents a departure from the aboriginal pattern and is undoubtedly a modern development. This interpretation is borne out by the fact that Favre explains (ni)chis as "oncle maternal, beau père," while Silvy gives the former usage but omits the latter. Evidently in the seventeenth century there were separate terms used for father's brother and mother's brother. It is significant also that Silvy's term for maternal uncle is identical with the one Favre gives for mother's brother and father-in-law, the latter usage being the one that persists most widely today. No distinct term for mother's brother, that is to say, is reported.

The unique practice at Escoumains scarcely needs further elucidation here. The term ntus is the equivalent of (ni)t8sis in the manuscripts and in Cree, where it is primarily applied to mother's sister. Aside from the Escoumains, we have already commented on its use as a general term for "aunt" in other Montagnais bands. In the sense of mother's brother it certainly cannot be connected with the older kinship pattern.

The absence of documentary information about the term for father's sister's husband limits our temporal range of facts severely, but it seems plausible to suppose that in the aboriginal Montagnais-Naskapi kinship pattern this term was the equivalent of the one used for father-in-law and mother's brother. This reconstruction seems justified in view of the data available from the Barren Ground band and the Cree.

(*b*) *Cree.*—The coincidence of the terms for father-in-law and mother's brother in this linguistic division receives ample confirmation from the vocabularies collected by Morgan and Lacombe. The term employed is

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[124] Strong writes this term nōhōmic. His h = the k of other students.

[125] Nūkūmish.

[126] Morgan no'-ko-mis (37, 39), no'ko-mish (38); Lacombe, n'okkumis. Morgan gives identical terms for mother's sister's husband and step-father.

cognate with the Montagnais-Naskapi series.[127] Lacombe, evidently struck with the dual signification of the term, writes: "mon beau-père, disent l'homme et la femme, c'est le même mot comme pour dire mon oncle maternel." It is only in Morgan's vocabularies that we find evidence of the triple equation in every case, the term for father's sister's husband being identical with that recorded for the other two relationships.

The correspondence between Strong's data from the Barren Ground band, the Favre manuscript, and the Cree equations just cited is very striking. This fact, together with the parallel equations for mother-in-law, father's sister, and mother's brother's wife, add additional weight to the conclusion previously drawn. In so far as we eliminate the usage of terms that appear to be relatively modern developments in certain bands, a kinship pattern is revealed which clearly reflects cross-cousin marriage.

In the discussion of Algonkin-Ottawa-Ojibway kinship terms in my previous paper[128] I was unable to draw any positive conclusions as to the ancient equivalence of the terms for mother's brother, father-in-law, and father's sister's husband. The difficulty arose from the fact that, although in one of the seventeenth century Algonkian manuscripts nichisens[129] was given this triple usage, in all the other sources the term given for father-in-law (ni·jini·s, the equivalent for modern Ojibway) was distinct from the one given for mother's brother and the other relatives mentioned above. Where terms for father's sister's husband were recorded, however, these were identical with those for mother's brother.

It now appears that the old Algonkian term referred to above is cognate with the Cree-Montagnais-Naskapi term (old Montagnais, (ni) chis; Cree, nisis; Barren Ground Naskapi, nis) which has an identical usage. There can be no doubt that it is a very old Algonkian term. Sapir, e.g., stresses the fact that "there is a distinctive term in all Algonkian dialects for maternal uncle" which he reduces to *-si-ss (*-zi-ss, *-ji-ss-), possibly *-sa-ss (*-za-ss-).[130] The extended use of such a term, including father-in-law and father's sister's husband, can scarcely fail, therefore, to suggest a sociological explanation. It is also interesting to note that in Sapir's opinion the stem to which Algonkin terms for father-in-law can be reduced (*-sil-), the same being the basal element in the Algonkin-Ottawa-Ojibway term,

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[127] Morgan, nee-sis; Lacombe, nisis. It will be noted that it is also used in the diminutive form. The stem is phonetically identical with the form as written by Strong.

[128] *Op. cit.*

[129] This term contains a double diminutive, a characteristic suffix in a number of Algonkian terms. Double diminutives of this term, however, occur elsewhere. Cf. Sapir, *op. cit.*, 22.

[130] Pp. 41 and 22, respectively.

is primarily not so much a noun stem denoting "father-in-law" as an old verb stem indicating the reciprocal relation of father-in-law to son-in-law or even the more general notion of kinship by affinity or marriage into another family.[131]

TERMINOLOGICAL EQUATIONS

	1 Woman's sister-in-law = woman's female cross-cousin	2 Man's brother-in-law = man's male cross-cousin	3(a) Sibling-in-law (of opposite sex) = cross-cousin	3(b) = Sweetheart	4 Son-in-law = cross-nephew	5 Daughter-in-law = cross-niece	6(a) Mother-in-law = father's sister =	6(b) = Mother's brother's wife	7(a) Father-in-law = mother's brother =	7(b) = Father's sister's husband	Total
MONTAGNAIS-NASKAPI											
Modern											
Barren Ground	×	×	×	×	×	×	×	×	×	×	10
Davis Inlet	?	–	–	–	–	–	–	–	–	–	
Escoumains	–	–	–		–	–	–	–	–		
Lake St. John			–		–	–	–		–		
Mistassini			–		–	–	–		–		
(Lemoine)	–	–	–		–	–	–		–		
Old (mss.)											
(Favre)		×	×	×	–	–	×		×		5
(Silvy)			×	×	–	×			?		3
CREE											
Prairie (M 37)	×	–	×		–	×	×	×	×	×	7
Woods (M 38)	×	–	×		–	×	×	×	×	×	7
Lowlands (M 39)	×	–	×		–	–	×	×	×	×	6
(Lacombe)	–		×			×	×		×		4

X = positive occurrence; – = negative; ? = uncertainty; a blank space indicates that information is not available from the source in question; proper names in parenthesis represent vocabularies for which an exact geographical location cannot be given; "M" refers to Morgan's schedules and the numeral which follows indicates the one which he assigned to the group cited.

Does it not seem likely that the use of the terms involving this stem belong to the same category as certain Cree-Montagnais-Naskapi terms for relatives by affinity, some of which were also cognate with Algonkin-Ottawa-

[131] *Ibid.*, 26.

Ojibway vocables?[122] These all proved to be more or less transparently descriptive and contain verbal rather than nominal stems as their basic elements. In view of the Cree-Montagnais-Naskapi material, it seems to me more than probable that the more highly descriptive vocable for the father-in-law relationship in Algonkin-Ottawa-Ojibway tended to displace nichisens in cases where the triple usage of this term weakened. And finally, the new term completely replaced the older one and became an established kinship term. If this hypothesis be adopted, we can assert that originally the pattern was identical with the Cree-Montagnais-Naskapi in respect to the equation mother's brother = father-in-law = father's sister's husband, and that cognate terms were employed in these groups. In both cases the equation also implies cross-cousin marriage, but, with the decline of this form of preferential mating, a new, or synonymous, term for father-in-law was adopted by the north-central Algonkian, whereas the Montagnais-Naskapi speakers in most cases clung to the old term for father-in-law but extended other terms for parents' siblings to mother's brother. The Cree alone maintained the aboriginal usage.

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PENNSYLVANIA

[122] See discussion of nɑwi'tcɑwɑ́gɑn, nin8hagan, and its derivatives; also nɑhatcɑm.

THE SCIENCE OF CULTURE

By GEORGE PETER MURDOCK

SOCIAL anthropology and sociology are not two distinct sciences. They form together but a single discipline, or at the most two approaches to the same subject matter—the cultural behavior of man. This identity has been all too frequently overlooked—by the general sociologists in their mad pursuit of the alluring mirages of social philosophy, methodology, and utopianism, and by the anthropologists in their eagerness to unearth before it is too late the facts of ethnography from which alone a general science of culture can be developed. If the anthropologists in many cases have failed to see the forest for the trees, the majority of the sociologists have yet to learn that such a thing as a tree exists. Nevertheless, the leaders in the various branches of these two allied fields, working independently, have succeeded in accumulating a respectable body of general conclusions based on inductive research. It is no longer admissible to spin out new theories of society and culture from the cozy depths of an armchair. We must start from the facts, of which an imposing mass has been assembled, and from the existing body of conclusions derived from the facts and verifiable by them. When this is done, and the deductions of armchair theorists are treated with the neglect they deserve, the apparent inconsistencies in the results of the reliable investigators in the several fields seem to fade away, and the broad outlines of an actual science of culture stand revealed.

That culture, a uniquely human phenomenon independent of the laws of biology and psychology, constitutes the proper subject of the social sciences, is a proposition accepted with practical unanimity by social anthropologists today. A large and increasing proportion of sociologists hold substantially the same position, and agree with Willey[1] that

> the study of culture—the processes of its origin and its growth, its spread and its perpetuation—constitutes the study of sociology.

As regards the exact definition of culture, however, and its precise relation to the data of the biological sciences, certain vagueness still prevails. Even the brilliant analysis of Kroeber[2] has left the concept hanging in a rather mystical though splendid isolation. Recent studies in various fields, however, have shed new light on the subject, and there seems to be no longer any basis for the criticism that the concept of culture is baseless or "supernatural." The differences in interpretation that exist are more ap-

[1] P. 208.
[2] 1917.

parent than real. They are for the most part differences in emphasis only, resulting from the fact that some authorities have stressed one factor and others another. It is the thesis of this paper that the various approaches are, actually, not contradictory, but supplementary; that their adherents err, not in what they assert, but in what they deny; that, in short, a true conception of culture will flow, not from the rejection of divergent points of view, but from their acceptance and reconciliation. After all, culture is a complex subject, and over-simple, particularistic explanations have gone out of fashion in the social sciences. It is here maintained, then, not that the students of culture should unite on some new concept, but that they are already in substantial harmony and need only to recognize that an adequate picture of culture emerges from a mere synthesis of their conclusions.

There is, in the first place, universal agreement—if we except the extreme racialists, eugenists, and instinctivists—that cultural behavior is socially rather than biologically determined; that it is acquired, not innate; habitual in character rather than instinctive. Culture rests, in short, not on man's specific germinal inheritance, but on his capacity to form habits under the influences of his social environment.

> Instinct and the capacity to form habits, while related functions, are present in any animal in inverse ratio.[3]

Habitual behavior, being more susceptible to modification as the result of experience, possesses a certain "survival value" which has led to selection in its favor during the course of organic evolution. Hence, in general, as we rise in the organic scale the proportion of specific instinctive reactions declines while adaptive behavior becomes correspondingly more prominent.[4] The higher the animal, the fewer its instincts and the greater its ability to profit by experience. Man stands in this respect at the head of the animal world; he is the habit-forming creature *par excellence*.

> If we neglect the vegetative . . . and the direct life conserving functions, such as attack and defense, there are few complete and perfect instincts in man yet observed.[5]

Briffault,[6] following Fiske, has sought to explain the adaptability of man's behavior, its comparative freedom from fixation by heredity, by the immaturity of the human child at birth and the prolongation of infancy; the network of association fibers in the brain, he maintains, is organized under

[3] Watson, 254.
[4] Briffault, 1: 45.
[5] Watson, 254.
[6] 1: 96–110.

the influence of environmental factors before heredity, as it were, can complete its work. Be this as it may, however, no doubt exists of man's supreme habit-forming capacity and of its basic rôle in culture. The endeavor, fashionable among psychologists not long ago, to interpret cultural phenomena as the manifestations of an equipment of assorted instincts, is now completely outmoded, its *coup de grâce* having been dealt by Bernard.[7] Man's habit-forming capacity, of course, has an instinctive or hereditary basis. The individual comes into the world equipped with a vast number of unorganized responses, which he gradually organizes into habits as the result of experience. It is through this "conditioning process" that cultural activities, like all other habits, are acquired. As Tozzer[8] points out:

> from the point of view of human culture we can eliminate everything but those characteristics of man which he learns from his fellow man.

The student of culture by no means denies the existence or importance of heredity. He accepts fully, and cordially welcomes, the immense strides being made by the science of genetics. He neither asserts nor denies that the laws of heredity, well established for anatomical and physiological traits, apply also to mental traits. This question, he believes, it is the province of psychology to decide. But he does deny that the laws of heredity can contribute to his understanding of cultural phenomena—phenomena which are in no respect hereditary but are characteristically and without exception acquired. The student of culture assumes heredity as a starting point, as a mere condition perhaps comparable to the geographic environment, and that is all.

Heredity merely underlies culture. It gives man the unorganized responses which are organized through the conditioning process into habits. It also furnishes him with the mechanism—the sensory, nervous, and motor apparatus—through which all behavior, acquired as well as instinctive, individual as well as social, finds expression. And finally, it probably provides him with certain basic impulses which urge him toward behavior that will satisfy them. The nature and number of these impulses, indeed their very existence, still need to be established by careful objective research. Nevertheless, the student of culture is probably justified in assuming them on the strength of their almost universal acceptance, although it is not his province to weigh the respective merits of the "wishes" of Thomas, the "dispositions" of Williams, the "drives" of Woodworth, the "socializing forces" of Sumner, the "residues" of Pareto, and the countless similar concepts of

[7] 1924.
[8] P. 56.

other writers. He assumes them, but he recognizes that neither they nor any of the other contributions of heredity determine or explain cultural phenomena. At best they merely direct human activities into certain main channels. Thus a sex impulse drives men to seek sexual gratification, and presumably underlies the marriage relation, while other impulses may similarly lie at the root of language, economic organization, religion, etc. The complexes of habit patterns which, in human society, surround the various impulses and their satisfaction are known as "institutions," which Allport[9] correctly regards as clusters of "similar and reciprocal responses of a large number of individuals" rather than as entities in themselves capable of acting upon and controlling individuals. The institutions of economic organization, marriage, religion, etc., which recur in all civilizations because they presumably have their roots in hereditary impulses or drives, constitute in their ensemble what Wissler[10] has aptly termed the "universal culture pattern."

It is of the utmost importance to note, however, that although heredity probably establishes the broad outlines of the universal culture pattern, it in no way determines the content of the latter. Heredity may enable man to speak, but it does not prescribe the particular language he shall employ. It may drive him to some form of sexual association, but the impulse may find adequate satisfaction in a wide variety of polygynous, polyandrous, and monogamous relationships. In short, culture owes to heredity only the number and general character of its institutions, not their form or content. Here, where environmental influences alone are at work, almost infinite diversity prevails. If we compare human behavior to a fabric in which heredity furnishes the warp and habit forms the woof, the warp remains everywhere much the same, for the student of culture is forced to recognize the essential

equality and identity of all human races and strains as carriers of civilization.[11]

The woof, however, varies with the number and variety of cultural influences. Since the warp remains comparatively constant, cultural diversities are due solely to diversities in the woof. To continue the figure, in the lower animals, whose behavior consists in the main of instinctive responses, the woof of habit is so thin and scanty that it scarcely ever conceals the strands of the warp. To this is due the unfortunate but natural tendency of biological scientists, familiar with the overwhelmingly important rôle of heredity

[9] 1927, p.168.
[10] Pp. 73–97.
[11] Kroeber, 1915, p. 285.

in animal behavior and cognizant of man's animal ancestry, to assume that human behavior is necessarily similarly determined and to seek explanations of cultural phenomena in terms of race or instincts or other organic factors. They overlook the fundamental fact that, in man, habits, especially those of cultural origin, overlie the hereditary warp so thickly that it is extremely difficult to perceive the latter at all, as is evidenced by the endlessly conflicting attempts to reconstruct man's "original nature." The students of culture, on the other hand, agree that explanations in terms of heredity are inadmissible, and that an adequate analysis of culture must start with a recognition of the unique rôle of habit in human behavior.

Habit alone, however, is far from explaining culture. Many cultureless animals possess a considerable habit-forming capacity, and some of the mammals are in this respect not radically inferior to man. Social scientists agree, therefore, that culture depends on life in societies as well as on habit. Individual habits die with their owners, but it is a characteristic of culture that it persists though its individual bearers are mortal. Culture consists of habits, to be sure, but they differ from individual habits by the fact that they are shared or possessed in common by the various members of a society, thus acquiring a certain independence and a measure of immortality. Habits of the cultural order have been called "group habits."[12] To the average man they are known as "customs," and anthropologists sometimes speak of the "science of custom."[13]

> The process of custom forming [as Chapin, p. 178, correctly states] is similar to that of habit forming, and the same psychological laws are involved. When activities dictated by habit are performed by a large number of individuals in company and simultaneously, the individual habit is converted into mass phenomenon or custom.

To the anthropologist, group habits or customs are commonly known as "culture traits," defined by Willey[14] as "basically, habits carried in the individual nervous systems." The sociologists, on the other hand, almost universally speak of them as "folkways."[15] General agreement prevails, therefore, that the constituent elements of culture, the proper data of the science of culture, are group habits. Only the terms employed are at variance.

Of the several terms, "folkway" possesses certain manifest advantages. "Custom" lacks precision. Moreover, though it represents adequately enough such explicit group habits as words, forms of salutation, and burial practices, it scarcely suffices for implicit common responses, mental habits,

[12] Smith, 82; Kroeber, 1928, p. 330.
[13] See Benedict, 1929.
[14] P. 207.
[15] See Sumner, 1906.

or ideas, such as religious and magical concepts, which are equally a part of culture. The term "culture trait," though it covers both of these types of group behavior, is also used to include material objects or artifacts, which are not group habits, indeed not habits at all but facts of a totally different order. Artifacts are not themselves primary data of culture, as is shown by the recognized distinction between their dissemination by trade and the process of cultural diffusion proper.

Material objects [says Willey, p. 207] are considered as the outgrowths of habits; the material culture is transmitted, in the long run, in terms of knowledge of how to make material objects.

"Culture trait" thus suffers from a basic inconsistency which renders its use frequently misleading and conducive to confusion of thought. The inadequacy of the term is tacitly recognized by anthropologists when they point out the danger of considering artifacts apart from their cultural setting.

Articles of everyday use [says Herskovits, p. 241], which might seem identical to the museum worker, may be utilized for vastly different purposes by each of the several tribes which employ them and with entirely different emotional reactions.

The substitution of "folkway" for "culture trait" would obviate all these difficulties. The term has never been employed for artifacts themselves but only for the group habits which surround them—the processes of their manufacture, the styles of decorating them, the methods of using them, the current ideas about them, etc. The folkways, in short, supply the social setting. The acceptance of "folkway" by the science of culture would have the great advantage of reducing the data of the science to a single class of strictly comparable phenomena. These phenomena, moreover, are objective behavioristic facts susceptible of repeated verification—an absolute prerequisite for a scientific study. The attempt in certain quarters to build a sound scientific structure on the quicksand of unverifiable subjective facts, such as "attitudes," has proved singularly sterile.

A study of the behavior of man shows that actions are on the whole more stable than thoughts.[16]

What differentiates the folkway from the individual habit is primarily the intervention of society. Non-gregarious animals, whatever their habit-forming capacity, could not possibly possess culture. From this it results that culture is superindividual. Individuals, to be sure, are the carriers of

[16] Boas, 148.

culture; a culture has no real existence save as it is embodied as habits in the nervous organization of the individuals who compose the group.

A culture is a system of interrelated and interdependent habit patterns or responses.[17]

Nevertheless, culture does not depend on individuals. An ordinary habit dies with its possessor, but a group habit lives on in the survivors, and is transmitted from generation to generation. Moreover, the individual is not a free agent with respect to culture. He is born and reared in a certain cultural environment, which impinges upon him at every moment of his life. From earliest childhood his behavior is conditioned by the habits of those about him. He has no choice but to conform to the folkways current in his group. Culture is superindividual, also, in the fact that its constituent folkways have in every case a history of their own, a history of their origin and diffusion which is quite independent of the lives and qualities of individuals. Even in the case of invention—the formation of a new habit which becomes a folkway when adopted by others—the individual is little more than the agent of social and historical forces. The study of parallel inventions[18] shows that cultural innovations spring, not full-fledged from the brains of their reputed inventors, but from the cultural background or "cultural base," in each case as a synthesis of many previous inventions.[19]

While each step in an invention is made by a specific individual, no step can be taken until necessary antecedents have been established, no matter what the abilities of the inventor. Because the inventor utilizes the transmitted culture and is limited by it, . . . it may be said that invention is superindividual.[20]

This view does not deny or minimize genius, but simply maintains that it is irrelevant to culture. Even more clearly is the history of folkways superindividual. An innovation may spread or stagnate, have its rise and fall, undergo countless historical fluctuations and vicissitudes. But in any case, once launched into the stream of culture, it is beyond the power of any individual to control. Evolution in the folkways, as Keller[21] has so overwhelmingly demonstrated, is governed by massive impersonal forces. Hence it is both possible and permissible to study the history of a folkway, or the evolution of culture in general, without reference to individuals or their organic and mental characteristics.

[17] Willey, 207.
[18] Kroeber, 1917, pp. 196–203; Ogburn, 80–102.
[19] See Gilfillan, 530.
[20] Willey, 210.
[21] 1915.

The fact that culture is superindividual lifts it beyond the sphere of psychology. As Lowie[22] has expressed it:

> the principles of psychology are as incapable of accounting for the phenomena of culture as is gravitation to account for architectural styles.

Psychology deals only with the individual. It can and does study his hereditary traits. It can also study the genesis of an individual habit, or of a group habit in the individual. As social psychology it can concern itself with the responses of the individual to his social and cultural environment. But it is powerless to explain the development of culture. No psychological laws can possibly account for the evolution of the radio, or the diffusion of the use of tobacco, or the spread of the commission form of municipal government. It is a matter of indifference to psychology that two persons, instead of one, possess a given habit, but it is precisely this fact that becomes the starting point of the science of culture.

Cultural phenomena, from their independence of the laws of biology and psychology, may be said to operate in a distinct realm—the "superorganic." The concept of the superorganic, though named by Spencer,[23] was first consistently adhered to by Lippert,[24] and first clearly formulated and analyzed by Kroeber.[25] According to this concept, the phenomena of nature fall into three great realms: (1) the inorganic, where the chemical and physical sciences study the phenomena of matter and energy; (2) the organic, where the sciences of biology and psychology study living organisms and their organic behavior; and (3) the superorganic, where the social sciences study cultural and historical phenomena. The superorganic, to be sure, rests upon the organic, precisely as the latter rests upon the inorganic. But the science of culture is just as distinct, as to subject matter, laws, and principles, from biology and psychology as the biological sciences are from those of the inorganic realm. This point of view does not deny the fundamental unity of all nature, nor the legitimacy in each realm of utilizing to the utmost the knowledge acquired in the realm immediately below it, nor the possibility or even probability that the superorganic may be ultimately resolvable into the organic, and both into the inorganic. It merely maintains that natural phenomena are divided into three realms of ascending complexity, and that the data of each may be most profitably studied by its own students with their own methods and instrumentalities.

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[22] Pp. 25–6.
[23] 1: 3–15.
[24] 1886–87
[25] 1917.

Although it is society which intervenes between, and in large measure distinguishes, the organic from the superorganic, society alone, even in conjunction with habit, is insufficient to explain the existence of culture. As Kroeber[26] points out:

> something more than gregariousness is needed to produce culture; otherwise cattle would possess it.

Society alone does not raise behavior to the superorganic plane, for, although many lower animals live in societies, none of them possesses culture.

> In this respect a tremendous gulf separates man and the lower forms of life, the anthropoid apes and social insects not excepted.[27]

The uniqueness of human culture is revealed by a comparison between man and the social but cultureless insects. A justly famous passage by Kroeber[28] will lose none of its luster by another repetition.

> Take a couple of ant eggs of the right sex—unhatched eggs, freshly laid. Blot out every individual and every other egg of the species. Give the pair a little attention as regards warmth, moisture, protection, and food. The whole of ant "society," every one of the abilities, powers, accomplishments, and activities of the species, . . . will be reproduced, and reproduced without diminution, in one generation. But place on a desert island or in a circumvallation two or three hundred human infants of the best stock from the highest class of the most civilized nation; furnish them the necessary incubation and nourishment; leave them in total isolation from their kind; and what shall we have? The civilization from which they were torn? One tenth of it? No, not any fraction; nor a fraction of the civilizational attainments of the rudest savage tribe. Only a pair or a troop of mutes, without arts, knowledge, fire, without order or religion. Civilization would be blotted out within these confines—not disintegrated, not cut to the quick, but obliterated in one sweep. Heredity saves for the ant all that she has, from generation to generation. But heredity does not maintain, and has not maintained, because it cannot maintain, one particle of the civilization which is the one specifically human thing.

The social phenomena of the ants are instinctive rather than acquired, transmitted through the germ plasm rather than through tradition, in short, biologically rather than culturally determined. All analogies drawn by enthusiastic biologists between human and insect or other animal societies, fall to the ground on this point. However striking the similarities may appear, they are never more than superficial.

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[26] 1928, p. 330.
[27] Case, xxix.
[28] 1917, pp. 177–8.

The oft-cited parallel between human marriage and forms of permanent mating among certain lower animals, especially the birds, furnishes an excellent illustration of this fallacy. When a male and a female bird associate in a seemingly monogamous relationship, they do so because they are impelled by a specific mating instinct. It is an organic rather than a superorganic fact. Man, on the other hand, marries because in the course of his cultural evolution he has developed around his sexual impulse certain conventional taboos and restraints which leave marriage as the proper and socially sanctioned form of sexual association. The only organic fact involved is the sexual impulse or drive; a specific mating instinct is lacking. The impulse urges man only to seek sexual gratification; it does not even predispose him to contract a permanent union; the form of expression it takes is determined by cultural factors alone.[29] The almost infinite variety of marriage forms precludes the possibility of a specific mating, much less a monogamous, instinct in man. As Lippert[30] so aptly phrases it:

> the institution of human marriage is not a subject of natural history but of culture history.

Nevertheless, the majority of writers on this subject have confused the organic and superorganic, perhaps none so persistently as Westermarck,[31] who thus states his major premise:

> The marriage of mankind is not an isolated phenomenon, but has its counterpart in many animal species and is probably an inheritance from some pre-human ancestor.

From such a premise he can only reach, for all his wealth of data and his serious scholarship, conclusions of the utmost unreliability. Yet many students of culture, with an amazing inconsistency, have accepted uncritically the results of a work which violates their every canon.

The analysis of social phenomena among the lower animals demonstrates that society, however essential, is insufficient in itself to explain culture. This fact needs to be stressed, for the danger is, not that the rôle of society may be overlooked, but that it may be overemphasized. Indeed, the tendency among sociologists in particular has been to single out society, not as an outstanding factor in culture, but as their very subject of study itself. Thus they commonly define their field, not as the science of culture, but as the "science of society." They ignore the fundamental distinction between the social and the cultural, which Stern[32] has so clearly pointed out.

[29] See Sumner and Keller, 3:1495–8.
[30] 1931, p. 69.
[31] 1:72.
[32] 1929.

Allport,[32] too, though with a different object in mind, has repeatedly attacked what he calls the "group fallacy." Not society, but culture is the distinctively human phenomenon. Those sociologists who have overlooked this fundamental fact have spent their time seeking "social processes" common to ants, cattle, and men alike, and they have found little save abstractions distressingly suggestive of the "conation" and "cognition" which an outmoded psychology once accepted as realities. The sterility of their work, as reflected in the contempt for sociology manifested by scholars in other fields, shows that they have been on the wrong track. As a consequence, the social anthropologists, whose results have encountered anything but a contemptuous reception from historians and others, now find themselves joined by a rapidly increasing school of "cultural sociologists," who realize that the proper study of sociology is culture.

If society does not suffice to explain culture, just what is it which, when added to social life, has made possible the development of culture in the human race? Numerous writers have suggested human intelligence as the answer to this question. It has frequently been pointed out that man's typical manner of adapting himself to his environment differs significantly from that of the lower animals. His characteristic mode of adaptation, it is suggested, is mental; that of the animals, physical. The development of one great physical adaptation, the human brain, has rendered unnecessary any further important physical specialization, since it enables man, for example, to invent fur clothing in the Arctic instead of developing a fur coat of his own, or to invent an airplane instead of growing wings. On the basis of this distinction Keller[34] defines culture as the "sum or synthesis of mental adaptations." Biological scientists (e.g., Tilney, 1931) go even further in stressing the importance of the human brain and human intelligence. But important as this factor unquestionably is, it by no means suffices to explain culture, and it has probably, like society, been considerably overemphasized.

The distinction between animal and man which counts is not that of the physical and mental, which is one of relative degree, but that of the organic and social, which is one of kind.[35]

Recent studies[36] have clearly demonstrated that the anthropoid apes possess intelligence, "insight," or "ideation," of an order comparable to that of man, inferior only in degree; that both apes and men. for example, solve

[32] 1924 and elsewhere.
[34] P. 21.
[35] Kroeber, 1917, p. 169.
[36] Köhler, 185–224; Yerkes, 575–6.

problems by intelligent behavior as opposed to the mere trial-and-error learning characteristic of the rest of the animal world. Yet, in spite of their intelligence, the apes lack culture.

A realistic view of human culture indicates that the rôle of intelligence is smaller than many have assumed. It is a truism of psychology and almost a matter of general knowledge that the chief use of the human mind is the invention of reasons or justifications for our beliefs and actions. The science of culture has suffered much in the past from rationalization or wishful thinking, and it should be among the first to minimize the importance of intelligence in human affairs. Comparatively little intelligence is needed to acquire a habit or folkway, none to preserve it.

> Most habitual responses [says Bernard, 1926, p. 34] occur on a relatively low level of consciousness.

Intelligence probably plays a more prominent part in the life of the individual than in that of society. At any rate, practically the only social process in which it demonstrably plays a significant rôle is invention. Yet it is a fact that apes also invent.

> With the ape inventive but cultureless, the question arises whether we have not perhaps hitherto exaggerated the importance of invention in human culture. We are wont to think of it as the creative or productive element in civilization. We tend to view the other processes in culture as essentially those of transmission, preservation, or decay. The idea of progress, which has so powerful a hold on the unconscious as well as the conscious thought of our day, may have led us to overemphasize the rôle of invention. Perhaps the thing which essentially makes culture is precisely those transmissive and preservative elements. . . .[37]

While it would be absurd to deny intelligence any importance in culture, the evidence clearly suggests the need of a search for other factors.

"That which distinguishes man from animals," says Anatole France, "is lying and literature." This aphorism expresses, with a characteristic twist, a widely if not universally recognized truth. The underlying idea, in more prosaic terms, is that man differs from the animals in the posssesion of language, which undoubtedly goes far to explain his possession of culture as well as his propensity for both forms of story-telling. Kroeber[38] has shown that the lower animals completely lack true language. Their cries, unlike human speech, are instinctive rather than acquired, organic rather than social. They convey to other animals, not objective ideas such as most human words represent, but merely subjective emotional states,

[37] Kroeber, 1928, p. 340.

[38] 1923, pp. 106–7.

such as suffering or sexual excitement. Thus they are comparable only to such words as the "ouch" uttered by a man unexpectedly pricked with a pin.

Since culture is not innate, it must be acquired anew by each individual and transmitted from generation to generation. It is this transmission of folkways which insures the continuity of culture in spite of the impermanence of the individual. The folkways thus transmitted constitute what is called the "social heritage" of the group. But culture is not only continuous; it is also cumulative.[39] New inventions and acculturations from without are added to the stream of culture in each generation, and in most cases the new does not displace the old. Thus we still retain wine in spite of the later invention of distilled spirits, and both in spite of Prohibition. The stream of culture, the social heritage, thus shows a definite tendency to grow richer and fuller with the passage of time. This does not mean that cultural acquisitions are never lost, but the "lost arts" of antiquity are few by comparison with the arts which have survived alongside newer inventions.

Both the transmission and diffusion of culture require some means of communication. Imitation alone seems insufficient. To be sure, certain songbirds, when reared in the nests of another species, are said to acquire and transmit the songs of their foster-parents. But except for such crude germs, nothing resembling a social heritage exists among the lower animals. What gives language its importance in human culture is the fact that it alone, with its derivatives such as writing, seems to provide an adequate means of communication. It alone makes possible the transmission of folkways, the continuity and accumulation of culture, the very existence of a social heritage. Without language, man would be little better off than the animals, as is proved by studies of deaf-mutes and other speechless persons.[40] In a society without language, each individual would have to begin exactly where his parents began; he could possess only individual habits, not group habits; his behavior, in short, would be confined to the organic level.

Many authorities have recognized this fundamental rôle of language in culture.

> The cultural life of man [says Stern, p. 267] as distinguished from the social life of sub-human groups is dependent on articulate language. . . . The most important influence of language on social life is derived through its making possible the accumulation and transmission of culture. Recent studies in sub-human animals, especially of anthropoid apes, reveal the presence of many factors upon which culture

[39] See Tozzer, 9.

[40] Briffault, 1: 23–40.

depends, learning, inventiveness, memory, even the beginnings of symbolic abstraction. But the absence of an articulate language prevents cultural life in the sense possessed by men.

If the transmissive and preservative elements in culture are basic, says Kroeber,[41]

then the indispensability of speech to the very existence of culture becomes understandable. It is the communications, perhaps, more than the thing communicated, that count. At any rate the fact that speech, to the best of our knowledge, is as thoroughly wanting among the anthropoids as is culture, tends to confirm this conception.

Four factors, as we have now seen, have been advanced by various writers, and have received wide recognition, as explanations of the fact that man alone of all living creatures possesses culture—namely, habit-forming capacity, social life, intelligence, and language. These factors may be likened to the four legs of a stool, raising human behavior from the floor, the organic level or hereditary basis of all behavior, to the superorganic level, represented by the seat of the stool. No other animal is securely seated on such a four-legged stool. Many live in societies. Some manifest no mean intelligence and habit-forming capacity. None, however, possesses language. Just as no one or two of these factors alone can suffice to explain culture, so no animal can maintain an equilibrium on a stool with but one or two legs. All four legs seem necessary to attain the level of the superorganic, and man alone possesses all.

The case of the anthropoid apes is particularly instructive. They possess three comparatively well-developed legs of the cultural stool, lacking only language. And they appear to hover on the very verge of culture. Köhler[42] has described the fads which occur with great frequency in groups of chimpanzees. From time to time one of these restless and curious animals makes an invention or discovery, e.g., sucking water through a straw, painting objects with white clay, catching ants on a twig moistened with saliva, teasing chickens by offering bread in one hand and jabbing with a sharp stick held in the other, or climbing rapidly to the top of a pole planted vertically on the ground and jumping off before it falls. The rest of the group then takes up the innovation by imitation, and for days or weeks the new practice rages with all the vigor of a recent fashion among humans, only to disappear after its novelty has worn off. While the fad lasts, it is certainly

[41] 1928, p. 341.
[42] 1925.

a group habit, an incipient element of culture. Only the absence of language, apparently, prevents the retention and accumulation of such acquisitions and their transmission to succeeding generations as a social heritage. Chimpanzee fads, in short, differ from human folkways only in their impermanency. Kroeber[43] would therefore seem to be wrong when he states that they possess no "residuum of unmitigatedly cultural material." Little more than a time element differentiates the chimpanzee use of straws from the modern American folkway observable in soft-drink parlors, or the ape's use of the "jumping stick" from human pole vaulting. The chimpanzee seems to be in the position of a man insecurely perched on a four-legged stool of which one of the legs is wanting. He can preserve a precarious balance only for a short time before the stool overturns and plunges him and his incipient culture once more to the organic floor.

The well-informed reader will find little that is new in the foregoing, little indeed that is not already widely accepted among students of culture. But this is precisely the purpose of the article, namely, to demonstrate that an adequate conception of the nature and basis of culture already exists and needs only to be recognized. The various partial interpretations of culture, stressing some of the basic factors and neglecting or even denying others, turn out upon examination to be not mutually exclusive but complementary. The general recognition of this fact should go far toward clearing the air of dogmatism and laying the foundation for constructive coöperative effort in solving the manifold problems of the science of culture.

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[43] 1928, p. 326.

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YALE UNIVERSITY
NEW HAVEN, CONNECTICUT

THE LOOM AND ITS PROTOTYPES

By CHARLES AMSDEN

THE archaeologist finds it expedient to work backward from the known to the unknown, in his task of reconstructing the past from its surviving vestiges of material culture. The technologist (or specialist), coming on the scene to reap the fruits of the other's labors, with perhaps a small contribution of his own by way of justification, is not committed to this topsy-turvy order. His is the privilege of taking the farthest point established by the other, and of proceeding in logical fashion forward. Indeed, he may, if he wishes, disregard the time element utterly, and outline the hypothetical course of development of the object of his study upon purely internal evidence; but in that course he must rely upon the archaeologist and the ethnologist for ultimate justification. He can prove little by this method, but he may suggest something of value to those who concern themselves more with the chronological and historical aspects of the matter under scrutiny.

Thanks largely to the archaeologist, Southwestern ceramics can be traced from a point which certainly is not far removed from its very beginning to the present day. Basketry can be studied over an even longer time range, although as the older art it has a still more obscure point of origin. Weaving, the third member of this triad of basic aboriginal crafts, is still far from yielding the uttermost secrets of its origin; its entire chronological sequence cannot yet be traced in any area. Hence this paper presumes merely to attempt an outline of its probable (or at the very least, its plausible) technological evolution in America. Evolution there must have been, for certainly nobody would cite the loom as an example of spontaneous invention.[1]

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[1] Surprisingly little attention has been paid to the development in America of the machine that clothes the world today. Appreciation of the significance of ceramic evolution, for example, is manifest in most writing on that subject in the field of American prehistory; but there is little in the literature of that field to dispel the feeling that the loom—most complex of aboriginal devices—"just happened." W. H. Holmes was keenly alive to the many evidences of textile development in America, and Clark Wissler in chapter 3 of his The American Indian gives an excellent summary of the types of weaving native to America. Most other writers characterize as "loom" any device employed in making textile fabrics, and dismiss the subject forthwith. Otis T. Mason, for example, for all his penetration in the study of basketry, was less sensitive to the various aspects of its offspring, weaving. In his article on Weaving in the Handbook of American Indians he ventures the opinion that the vertical loom of the Southwest is a hybrid device of mixed Chilkat and Spanish character; and in the article on Blankets in the same work he marvels that the Chilkat blanket weaver used no shuttle. Weaving on a loose-hanging warp, without heddles, she could not possibly have used a shuttle.

The Origin of Weaving

The assumption that weaving had its origins in basketry is well justified. In its cruder phases, some of them persistent even today, the similarity leaves no doubt upon that point. The distinction between the two crafts is often an arbitrary one, based upon form and use rather than upon method of construction. The fine twined sea-grass basket of the Attu islander is truly a woven fabric; yet its process of manufacture is called basketry. The mat of the same people is almost identical structurally; yet because it is a flat object of much greater size, we do not hesitate to call it a specimen of weaving. Plaiting, a common method of basket-making, is identical with plain weaving. Twilling occurs in both weaving and basketry, for it can be done mechanically as well as by hand. Twining is essentially a hand technique; yet we speak of twined weaves. Where then shall the line be drawn? Until the process is mechanized, or some flexible material which cannot easily be manipulated with the hands alone is introduced, form and function must be determining factors. Weaving as a technique distinct from basketry may be said to begin where the fineness or the flexibility of the material employed compels (or at least renders advisable) a resort to some device which facilitates manipulation of the component fiber.[2]

Exceptions will occur, as in the case of the basket woven bottom-uppermost upon a supporting stake, and form and function must decide the question. Not until true mechanical weaving upon the loom comes into the complex can we always be entirely sure of our ground. That, however, is a relatively late development, marking a high point of achievement; for the finest woven fabrics the world has ever seen, whether Gobelin tapestry or Oriental rug, can be duplicated on the loom used in the Southwest centuries before European influence came in.

The Supporting Stake

The present study takes as its thesis the proposition that weaving differentiates itself from basketry at the point of introduction of a device to facilitate manipulation of the material employed.[3] The germ of loom development therefore appears—on purely technological grounds, be it remembered—to lie within the stake upon which the Attu basket and others of the Northwest Coast area are woven. It is significant in this connection that the basket woven on a stake is of material extremely fine and flexible,

[2] Wissler, p. 25, offers a similar criterion: the use of a twisted or spun fiber.

[3] Mason, p. 10, points out that basketry has two fundamental classes: coiled, which leads to the needle, as he puts it, and woven, which leads to the loom. Only the latter class is involved in a study of loom development.

which has greater need of support than the coarser materials usually employed. Willow splints, for example, are rigid enough to retain the position in which they are placed, and in their use no support is needed.

The first step toward the loom, then, was probably dictated by the limitations of the available material. In all aboriginal crafts, for that matter, the material influences the technique quite as much as the technique affects the material. Stones which will not wear down are flaked; stones which will not flake are shaped by abrasion. The plasticity of clay, the tendency of bone to split to a pointed end, the sturdy pliability of wood, have largely determined the form and function of objects wrought from these substances. Applying this principle to the textile crafts, it is natural to find that those materials which are easy to manipulate are handled without a supporting device; those which are too fine and flexible to maintain themselves in the process of manufacture are artificially controlled. The determination to make use of such fibers despite the difficulties inherent in their structure may well have been that spur of necessity which mothered the invention of the loom.

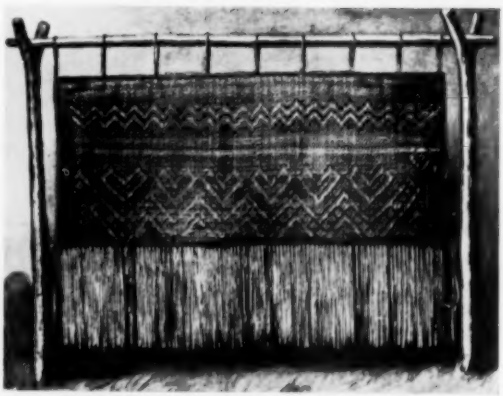
Closely akin to the supporting stake method of basket-weaving is the manner of making twined bags of buffalo hair with either a hair or a bast warp. This technique, of which little notice is found in the literature of American anthropology, is widespread among the Central Algonkian and Southern Siouan peoples, the Osage in particular having it highly developed.[4] In this type of weaving the radial warp of the bag-to-be is suspended by a cord from overhead, bottomside up, and the weaver completes the fabric by twining the weft upon the warp foundation. (See pl. 3*a*.) The buffalo hair used is hand-spun, commonly by rolling it upon the thigh with the bare hand. This form of weaving employs no special devices except the means of suspension. It is an early form and like most such was probably widespread in America. There is reason to believe that the Basketmaker of the Southwest employed it in making twined bags of yucca and apocynum; and Kidder (p.623) thinks the extraordinarily complex sandal weaving of these early people was done in almost identical fashion by suspension of the warp from a central point. (See fig. 1.)

The Supporting Frame

From the supporting stake to the supporting frame, or from single-point to multiple-point suspension, is no great step. The two are used side by side in the Northwest Coast area—the region which affords the most abundant

[4] I am indebted to M. R. Harrington for information on this point.

a



b

a. Suspended warp basket-weaving. After Mason.
b. Chippewa weaving frame. After Mason.

illustrations of the steps precedent to loom weaving. The stake offers only a single point of support. A mat or blanket could not be woven upon it for that reason. Planting another stake alongside and stretching a cord, or laying a pole transversely between them, provides an adequate framework for mat weaving. Strips of fiber are suspended from the transverse cord, and upon this warp web every device known to weaving—plaiting, twining, twilling, with their manifold variations—can be practiced. (See pl. 3*b*.) This simple structure will do the work of a loom; but it is not by any means a loom, only a supporting frame upon which every step in the weaving process must be performed slowly and laboriously, handling each separate strand of warp, one by one.

FIG. 1. Probable method of sandal weaving, Basketmaker period. After Kidder.

Despite its theoretical possibilities, the weaving frame has its practical limitations. Its warp strings dangle loosely and tangle easily.[5] To work a complicated pattern upon this shifting skein would be a slow and difficult process; to press home the individual strands of the weft, with no counter-resistance to the pressure, an exasperating and laborious task. The device is well suited to the function to which its highly practical users applied it: the weaving of coarse mats of rough bast, in the main. In this function it

[5] The Chilkat weaver's practice of making a little ball of the surplus ends of her warp (which are to form the fringe of the blanket) by tying them up in a membrane bag may serve a purpose in keeping the strands untangled, besides keeping this protected portion clean. If so, the device would be analagous to the weighted warp of the Old World, of which I can find no trace in America.

was widely distributed, probably throughout North America, wherever a suitable plant fiber grew in sufficient abundance to provide the requisite raw material.[6]

The weaving frame was adapted to the use of a fine fiber, wool, in a single known type of aboriginal American weaving, the Chilkat blanket of the upper Northwest Coast. Wool of the Rocky Mountain goat is used as weft, with a warp of cedar bark and wool together. This use of a coarse bast warp gives a certain rigidity to the structural foundation, in part overcoming the handicap of the free-hanging lower end. For the rest, the slow process of twining is employed, but it is done with such care and versatility in weft manipulation that the Chilkat blanket is justly renowned. No one would hesitate to call it a textile in the ordinary sense of that word.

The Fixed-Warp Frame

The Northwest Coast affords another prototype of the loom, which in one respect is distinctly nearer to it than is the free-warp frame on which the Chilkat blanket is woven. The Salishan peoples of the region about the mouth of the Fraser and the Columbia rivers used the wool of a domestic dog, bred for the purpose, on a rig which at first glance appears to be a true loom. It comprises two horizontal bars, an upper and a lower, fixed at an interval of perhaps three feet to two upright posts. The wool warp is wound around these two bars in a continuous strand. Thus a rigid warp is secured and the apparatus would be a loom if it had heddles. Having none, it is merely a weaving frame of more specialized type than any yet considered; the weft is worked into the warp by hand, crossing one warp strand at a time. Illustrations of this device show that unbattened or "basket" weaving was done upon it, and that the fabric grew from the top downward.[7] (See pl. 4.) In the true loom progression is invariably upward, or away from the weaver, as will be seen.

Three important developments characterize the Northwest Coast types of weaving. One is the rigid-warp frame of the Salish just described. Another is the use of wool, a far more satisfactory textile fiber than the usual basts. The third is the occurrence in Chilkat blanket weaving of a technique

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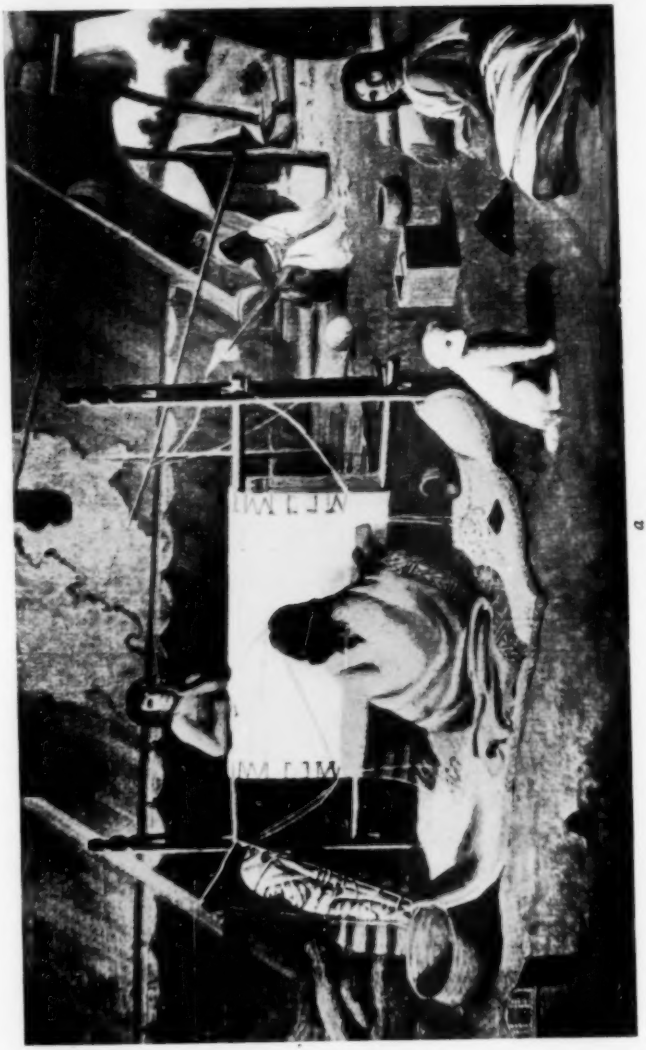
[6] Holmes, 1884, figures pottery from the Southwest, the Mississippi basin, and the Eastern Woodlands area, showing impressions of textiles which are matting, for the most part. Hoffman, 1896, describes the process of mat making by the Menomini. Mason, 1904, figures a weaving frame of the Chippewa. Wissler, 1922, mentions the device among the Ojibway and the great Algonkian family in general. Further search would doubtless yield much more evidence of distribution.

[7] See Kissell, 264, and Curtis, 9: 72.



a
Salish weaving frame.

(called tapestry weave when practiced on the true loom, although I am not certain of the applicability of the term to twining, except that the tapestry effect is produced as effectively as in loom weaving) which effaces the warp and gives the weaver's fancy free play in weft design. Each of these developments will be discussed in turn.

It has been seen that the simplest devices for weaving—the supporting stake for basketry, the suspension point for making twined bags and sandals, and the matting frame—have in common a free-hanging warp. They have likewise in common a strong association with twining, a rudimentary hand technique, as opposed to the in-and-out weaving which is characteristic of the loom. The transition from free-hanging warp to rigid warp marks an important step in advance. There can be no true loom weaving without rigid warp, just as twining is impracticable, if not all but impossible (except by placing the twined strands at broad intervals, as was done in making the fur and feather blankets so common in the Southwest), on any but a loose warp; it is a technique requiring considerable manipulation of the warp strands, and taut strings reduce this freedom of movement very greatly. The weaver's craft is readily divisible into two broad phases of development: the first might be called the free-warp phase, beginning with the basketry stake and ending with the Chilkat weaving frame; the second, the fixed-warp phase, with the Salish frame above described as its first step and the true loom its culmination.

Wool and Its Preparation

The use of wool is the next development for discussion.[8] Wool is not merely just another fiber; it is a material which requires special processes. Notably, it should be carded, and it must be spun. Carding straightens the tangled short hairs, while spinning welds them into a smooth, continuous strand, as fine or as coarse as the spinner may desire, and of unlimited length. Carding is simply a process of combing. It is not indispensable, and in fact was dispensed with in Chilkat blanket weaving, the hair or wool being formed into a rove by rolling it on the thigh. The Salishan weavers often carded their fiber by combing, but it seems to have been for the purpose of mingling the fiber of milkweed or nettles, or the down of birds, with the wool of the dog.

Holmes (1896, p. 21) comments as follows on the significance of spinning in the development of the textile crafts:

[8] Technically, the term wool includes cotton, which as Wissler points out (p. 43) is a true wool, not a bast, despite its vegetal origin.

The use of simple strands or parts in textile art precedes the use of spun threads, but the one use leads very naturally to the other. In employing rushes, stems, grasses, etc., the smaller strands were doubled to secure uniformity of size, and when a number of parts were used they were combined into one by twisting or plaiting. In time the advantage in strength and pliability of twisted strands came to be recognized, and this led to the general utilization of fibrous substances, and finally to the manufacture of suitable fibers by manipulating the bark of trees and plants. Spinning was probably not devised until the weaver's art had made considerable advance, but its invention opened a new and broad field and led to the development of a magnificent industry. Semi-rigid fabrics served for a wide range of uses, as already described, but soft and pliable cloths for personal use and ornament were made possible only by the introduction of spinning.

Spinning, or twisting the individual strands into a thread, is an essential process in weaving in wool. In its simplest form it may be integral with the process of roving by rolling the hank of wool on the thigh, pulling it the while to produce a thinner and more elongated form. This is the technique of preparing buffalo hair for making twined bags; but the Northwest Coast weavers had advanced beyond that stage. They used the spindle, a specialized device of world-wide distribution.[9] (See fig. 2.) This vital adjunct to weaving in wool comprises a shaft and a round weight, commonly of stone, clay, or wood, slipped over one end of the shaft like a collar. The weighted end of the spindle is commonly placed on the ground, and from the other end the instrument is twirled—either in the fingers or by rolling it along the thigh or shin. The whorl (weight), besides holding the wool in place on the shaft, acts as a fly-wheel, retaining the momentum of the twirl and giving an even movement to the revolving shaft. The free hand of the spinner manipulates the carded or roved wool, which is being wound upon the spindle and pulled and twisted into a continuous thin strand in the process.

Another important accessory to wool weaving is the comb. Its purpose is to straighten and press home the fine woolen strands after they have been enmeshed in the warp. On theoretical grounds the comb probably originated in the awl or bodkin of the basket-maker—an implement with but one point. The comb is only an awl with multiple points. It works no better than the other, but it does work faster; and it is completely specialized, be it remembered, whereas the awl is an implement of many and various uses.

The Tapestry Weave

Last of the three developments characteristic of Northwest Coast weaving previously referred to is the tapestry weave: it has had a great influ-

[9] Hooper figures spindles from ancient Egypt, Greece, India, Africa, and several American countries. All are remarkably alike. (See Hooper's pl. 2 or our fig. 2 taken from Hooper.)

ence upon the development of textile design. In the open or "basket" weave the warp is everywhere visible; the weaver must take it into account in

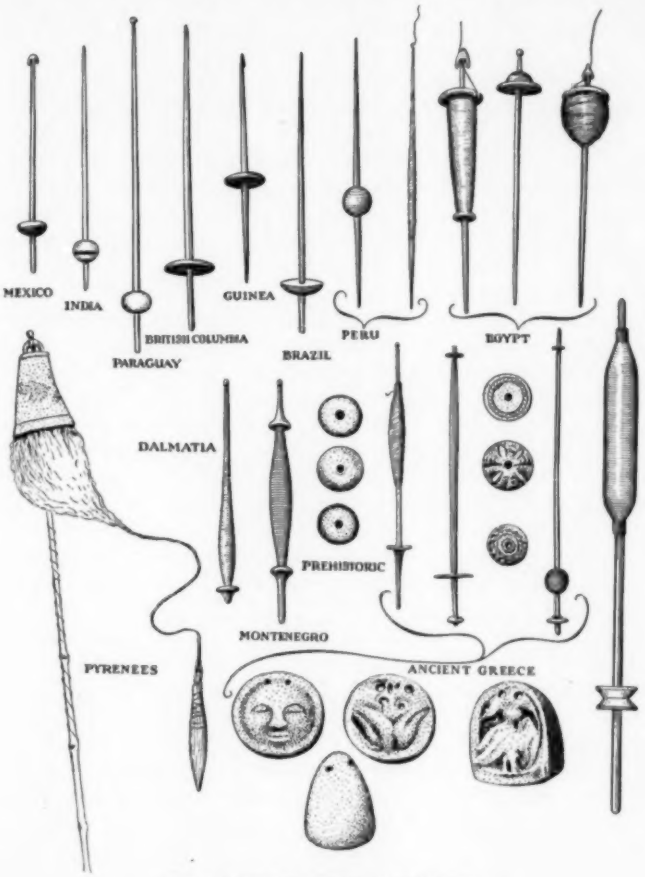


FIG. 2. Primitive spindles. After Hooper.

creating her pattern. For that reason she cannot achieve a solid figure of any considerable size, the nearest possible approach to it being a checkerboard outline produced by contrasting colors in warp and weft. This limitation of

effect by structure is not without broad possibilities of its own, to be sure. In the "basket" type of weaving it was common practice to use different colors in the warp web with a single color of weft. Thus, wherever unicolored weft met multicolored warp a visual contrast resulted, and with this the weaver fashioned her designs by manipulation of the strands of various hues into orderly arrangements.

In belt loom weaving as practiced by the Navaho and Pueblo today, and by primitive peoples the world over, the many possibilities of the use of warp color in design are illustrated. Study of any specimen will reveal this significant limitation, however: warp color is invariable in the individual strand, throughout its entire length. A pattern featuring white warp at the beginning of weaving must continue in white to the very end. As a consequence, patterns in which warp color occurs—whether in "basket" weave or in tapestry weave with raised warp effects, as exemplified by the woven belt or sash of the Pueblo and the Navaho—tend toward a constant repetition of the unit figure along the straight lines of the warp: structural considerations have a dominant effect upon the design.

Weft, on the other hand, can be manipulated freely, its color changed at will. Hence in the "basket" weave the color of the warp must always be reckoned with, while in the tapestry weave it can be ignored entirely. The latter offers far more freedom in design, with consequent greater stimulus to development of that important factor in the textile crafts. This stimulus must in turn have fostered progress toward the true loom, manifesting itself in a desire to employ fine-textured fibers that lend themselves most readily to complexity of design. To employ such fibers an auxiliary device of some sort was obviously a necessity—and the true loom was the ultimate outcome. It must be borne in mind that in weaving, unlike pottery, for example, design is integral with structure. Method and material both have their influence upon pattern.

The weaving of the Northwest Coast seems to mark very clearly the point of transition from bast to wool, and to exemplify a long stride toward the true loom. The Chilkat blanket—technically the cruder type, although it is much the finer product, as a rule—has a warp of wool and bast, a weft of wool. It is woven on the old primitive matting frame, and the method of its weaving is the ancient basketry technique of twining. The Salish type, on the other hand, employs the rigid warp, and an all-wool material (with some exceptions, as noted, in which other materials are intermingled). In both the direction of weave is downward. Taken together they bridge a broad gap on the long road from the supporting stake to the loom.

Little by little, in this series of steps in a postulated development, weav-

ing is drawing away from the ancient craft of basketry, emerging into full light to take its place in the trinity of fundamental industries: basketry, weaving, and pottery. Its requisite special appliances have come into being —the rigid-warp frame, the spindle, and the comb—which make possible the use of fine fibers in tapestry weaving. The true loom lies not far ahead; yet one more step must be noted before it can take its place in the series, and of this step Peru offers the only example yet recorded to my knowledge.

The Needle Loom

On the authority of Joyce (p. 200), the loom of early Tiahuanaco times in Peru was a fixed-warp affair like that of the Salish but much smaller. (See fig. 3.) A further point of resemblance lies in the fact that it was used

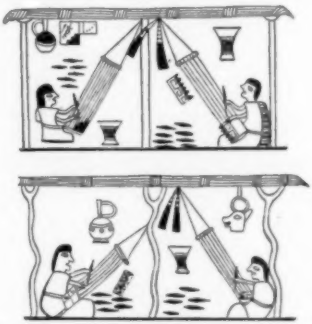


Fig. 3. Peruvian needle loom. After Mead.

in plain weaving, not in hand twining. Joyce calls this device a needle loom[10] because long slender needles worked the weft (of cotton or Andean camel wool) into the warp web.[11]

[10] An illustration, copied from Tello's Peru Antigua, is shown in Mead (p. 38). (See our fig. 3.) It is from a Peruvian vase painting, hence subject to chronological assignment.

[11] A process somewhat similar is reported from the Osage, as quoted by Holmes, 1896, pp. 25–26, from Hunter: "The hair of the buffalo and other animals is sometimes manufactured into blankets; the hair is first twisted by hand, and wound into balls. The warp is then laid of a length to answer the size of the intended blanket, crossed by three small smooth rods alternately beneath the threads, and secured at each end to stronger rods supported on forks, at a short distance above the ground. Thus prepared, the woof is filled in, thread by thread, and pressed closely together, by means of a long flattened wooden needle. When the weaving is finished, the ends of the warp and woof are tied into knots, and the blanket is ready for use."

"The loom is a machine," says Washington Matthews in his Navaho Weavers. He might have said yet more: that the loom is the only machine aboriginal America ever produced.[12] To make the loom a machine it wanted but one thing: a device for mass manipulation of the warp web, in other words, the heddle. The heddle marks the true loom.

At first thought this type of weaving frame seems no great advance toward the true loom, for the needle is a common implement and a very ancient one. Yet the long Peruvian needle, capable under deft manipulation of lifting a number of alternate warp threads and thus forming a shed for the passage of the weft, assumes considerable significance. Heretofore we have had no inkling of a means of handling more than one strand of warp at a time. Weaving has been specialized, already in this series, to a high degree; but now it is about to become mechanized, and that is the ultimate step.

Origin of the True Loom

In the present state of our knowledge one can only speculate upon the time and place of origin of the true loom in America. Peru would be a good guess, for there only, so far as known, has the needle loom come to light. There too the use of cotton, always associated with the true loom, was known in needle loom times. The heddle loom, or true loom, follows the needle loom closely, and it is quite possible that archaeological research in Peru will settle the matter. If not Peru, then Middle America; for we have every reason to believe that the loom came into the Southwest through the Pueblo culture, along with cotton; and cotton, as a cultivated plant, is associated with Middle America in the most generally accepted theory of the New World origins of agriculture. In speculating upon this point it is highly significant that nowhere in aboriginal America, so far as known, can the true loom be dissociated from cotton, nor cotton from corn.[13]

Batten and Shuttle

The batten, a blade-like stick used in pressing down the weft strands to produce a tight fabric, follows the heddle more or less as a matter of course.

Fur blankets were commonly made in the Great Basin and the Southwest by staking out the strips of furred hide which formed the warp, and twining in the weft at broad intervals—a similar, though more rudimentary, technique.

The "long flattened wooden needle" referred to above may be ancestral, technologically, to the batten.

[12] With the possible exception of the two mechanical drills—bow and pump. I cannot learn whether they are aboriginal. Wissler (pp. 132–134) thinks they are not.

[13] The possibility of an exception to this statement must be noted: the Cherokee may have had a true loom, independently invented, used with a bast (apocynum?), not a wool. See page 23.

Until a shed could be opened in the warp web it could serve no purpose: the comb did the pressing home, over a small area, which the batten does over a larger area. The comb remains useful in straightening out twists and snarls in the weft, and in weaving those last few inches of fabric wherein space is so constricted that the batten has no room for movement. The latter has a function apart from that of tightening the fabric, however; it serves, when turned sidewise within the shed, to hold it open while the weft strands are passed through. In this situation a shuttle would be of distinct service if weaving were being done in solid colors or plain stripes. New World fabrics show a great preference for figured patterns, however, and a completely specialized shuttle was never evolved. The long needle was used as a sort of shuttle in Peru; but it is probable that the prehistoric Pueblo, like their modern descendants and the adept pupils of the latter, the Navaho, rolled their weft yarn into a little ball for greater ease of handling, or at best used a twig (an extemporaneous needle, as it were) for the purpose.

We may be grateful that the shuttle did not come into use. Its effect upon design is deadening, encouraging as it does a monotonous passing back and forth of the weft which gives at best but an unimaginative pattern of plain stripes. The shuttle tends toward rapid progress in weaving but not, certainly, toward elaborate design. Witness for example the Chimayo blanket and the modern Saltillo sarape, both woven on the Old World horizontal loom with foot treadles for heddle manipulation, and a thrown shuttle for rapid intercalation of the weft. In them the mechanical factor in loom weaving comes too much to the fore: the art of weaving sinks to the level of a mere craft, over-mechanized, monotonous in method and scarcely less so in result.

Direction of Weave

Two matters remain for comment before this brief study of loom development in America will have covered its allotted ground. The first has to do with the direction of weave, whether downward or upward. The basket woven upon a stake grows downward, as do the twined bag, the mat with free-hanging warp suspended between two upright stakes, and the Chilkat and Salish blankets. Were it not for the latter, woven upon a rigid warp, it could be stated axiomatically that free-hanging warp and downward weave go together, rigid warp and upward weave together. When the warp hangs free, the fabric must necessarily grow from the bound end to the free end. When the warp is made rigid by fastening both ends, however, as in the Peruvian needle loom and the true loom wherever found, the direction of weave immediately changes, with the single exception of the Salish blanket.

The reason for this change of direction seems obvious. Gravity alone would ultimately dictate the method eventually adopted. Weaving is a process of piling threads or strands of fiber one upon another within the clasp of a warp web. It is naturally desirable that each new thread added to the fabric lie upon the firm foundation of others similarly laid, rather than hang suspended in air until another one can be inserted to maintain it. The batten is another reason for upward rather than downward weaving: it is natural to draw downward, or toward the body, rather than to push upward, away from the body; greater pressure can be brought to bear, with less exertion. The emergency brakes on our motor cars operate on this principle.

The Waist Loom

The final point of technical character has reference to the method of suspension of the loom. It may be said at the outset that the horizontal loom is unknown in aboriginal America. The loom for belt or sash weaving is sometimes a rigid frame (often of such simple character as the forked limb of a tree, however) which can be laid flat on the ground and operated horizontally, but in fact is generally inclined at an angle which suits the convenience of the weaver by leaning the frame against a vertical support.[14] Usually, however, belts, sashes, garters, etc., were woven on a waist loom.

The waist loom is the most common early form of the true loom, and it is neither vertical nor horizontal, but diagonal. The weaver suspends it at a height which will present the warp web at an angle convenient to her hands, when by attaching the lower or free end to a cord around her waist, she draws the loom taut.[15] This type of loom was used extensively in aboriginal America. It was common in Peru, for a number of complete looms have been found[16] and the great majority of Peruvian fabrics, like those of the prehistoric Pueblo, are of such slight width that, inferentially, they were woven on the waist loom. Matthews' illustration of the Aztec weaver, from the Codex Vaticanus, proves the existence of this loom in a dominant culture of Middle America.

For the prehistoric Pueblo we have a vast number of fragmentary cotton textiles, evidently loom-woven,—none of them, on the authority of Walter Hough (p. 257), wider than 26 inches. There is evidence even more specific,

[14] A frame of this type from the Navaho is illustrated in Shufeldt, p. 394.

[15] Matthews has illustrations of the waist loom as used by the Navaho (pl. 36), the Zuñi (pl. 37), and the Aztec (fig. 59). In each case the loom has an angular position, varying from the near-horizontal to the near-vertical. Logically, the weaver's own preference, rather than rule or custom, would determine the inclination.

[16] I have notes on two in the Brooklyn Museum: catalogue nos. 27732 and 28846.

however: Neil M. Judd found seven sticks in Kiva D at Pueblo Bonito which beyond reasonable doubt are the end bars of waist looms. Only two could be saved, and these I examined, through Mr. Judd's courtesy, in the National Museum (catalogue number 335284). They are of about 1½ inches diameter and respectively 24 and 25 inches long. Each has a knob at either end, precisely as in Matthews' illustration of the Aztec weaver. These knobs, which are integral with the stick itself, probably served to keep the ropes by which the loom was suspended at either end from slipping off the stick.

A characteristic of fabrics woven on the waist loom is the long seam which indicates that two narrow strips have been sewn together (sometimes loom-joined) to form one wider piece. The cotton textile fragment from Mesa Verde figured in Nordenskiöld's plate L shows such a seam, as do several fragments in the P. G. Gates collection of prehistoric Pueblo material in the Southwest Museum. Thus we have fairly good evidence that the waist loom was in common use in the prehistoric Southwest.

The Vertical Loom

The wide distribution of the waist loom is well established. What of the vertical loom, the type that is suspended from above and lashed or weighted down at its base? Logically it might be considered the earlier type, by reason of the facts that the frames for weaving mats and hand-twined blankets are always vertically hung,[17] and a custom so long established would not be lightly broken. On the other hand, the adjustability of angle of the waist loom is a great point in its favor, particularly in such fine work as that done on the Peruvian needle loom. It seems probable that the latter is the immediate predecessor of the true loom, and that it set the fashion of diagonal suspension at the very outset. In that case vertical suspension would be a revival, or perhaps a regional survival, of an earlier custom.

There is strong reason to conjecture that the vertical loom had its origin in the Southwest, perhaps as a regional survival. The American Museum of Natural History has an object (catalogue number 29.1/4581) from a cave in Cañon del Muerto which at first glance appears to be a miniature loom, such as the Navaho make today for the tourist trade. Its warp web is strung between two sticks each about 12 inches long, the selvage ends being bound to the sticks with a spiral winding of cord, precisely as the Navaho and the Hopi attach their warp web to the horizontal supporting bars. Here the resemblance ends, for this specimen is not a loom, but a twining frame.

[17] Necessarily so: free-hanging warp cannot be made to take any but a vertical position.

The evidence is incontrovertible, consisting in several rows of weft twined about the warp strings at intervals of about 2 inches. Yucca fiber is the material of this fabric, which is structurally identical with the fur blankets of the Great Basin and the Southwest. The piece is more of a net than a solid fabric, because of the wide spacing of the twined weft; in that respect it offers additional evidence that close-set twining cannot be done on a fixed warp, as previously pointed out. Whether this interesting specimen is attributable to the Basketmaker or the Pueblo culture horizon unfortunately is not known; hence it is impossible to determine whether it is a predecessor or a contemporary of the true loom. The significant fact remains that here is a device for twining, but with a rigid warp suitable for vertical suspension;[18] and like the vertical loom, so far as known, its occurrence is limited to the Southwest.

There is considerable evidence of the use of the vertical loom by the prehistoric Pueblo. Until quite recently this evidence consisted in loom holes and overhead supports found in ruins, usually in kivas, where, traditionally, the men did the weaving of the village. Judd (pp. 24, 28, 31, 34) found a number of loom holes at Betatakin, more often in living rooms than in kivas; (his fig. 18 shows a loom anchor in place in the floor.) Kidder and Guernsey report loom holes, often with anchor loops still intact, from various cliff dwellings in northeastern Arizona (pp. 60, 70, 73 and figs. 22 and 26), saying on page 60, that

> there can be little doubt that these series of loop holders served as attachments for the lower bars of looms.[19]

It is true that none of the series mentioned had a length of more than four feet, the holes being usually about one foot apart, and arranged in a straight line. Four feet, however, is a considerable width, particularly when it is remembered that a loom of even greater width could thus be secured by allowing the lower bar to project beyond its floor lashings.

It is difficult to reconcile loom lashings four feet in extent with textiles not exceeding 26 inches in width. Yet Hough's statement, referred to above, was incontrovertible at the time it was made, so far as I can learn: neither loom, nor poles, nor fabrics, which could be associated with a greater width had come to light in the Southwest. In the summer of 1929 Earl Morris

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[18] The waist loom can be vertically hung, as proved by the vertical narrow loom on which the Hopi today weave their broad cotton sashes; and it is reasonable to conjecture that the broad vertical loom grew out of the fashion of suspending the waist loom vertically.

[19] Little doubt indeed, as will be seen by consulting Mindeleff, wherein are described (pp. 132–133) and figured (figs. 27 and 31) loom attachments of identical form and position in modern Hopi kivas.

made a find in Cañon del Muerto which strengthens the case for the broad vertical loom. Wrapped about the mummified body of a man—a weaver, to judge by the many hanks of spun cotton yarn in the grave—was a large white cotton blanket of plain "basket" weave,—precisely such a blanket as a modern Hopi weaver might produce. It was recently on display at the American Museum of Natural History, where I was permitted to open the case and by working my ruler around the bundle a few inches at a time, to measure the width of the blanket. It measured, perhaps a bit inexactly, 58 inches in width. The length could not be determined because of other wrappings.

Thus the existence of the broad vertical loom among the prehistoric Pueblo is all but proved. It would be a difficult task indeed to weave a fabric five feet wide on a waist loom;[20] and aside from that, we have the evidence of the loom holes and lashings of prehistoric time, identical with those of modern times.

Pottery accompanying the burial described above was of the Mesa Verde type. Beyond a doubt, the old weaver was wrapped in his blanket and laid in his grave several centuries before European influence came into the Southwest. With the final statement that this cotton blanket was identical in every detail of construction with the woolen blankets of the Hopi and the Navaho of today, the aboriginal American art of weaving is brought down to the present time. "In the Southwest," as Lummis said, "we can catch our archeology alive."

Loom Development in the Old World

It is interesting to compare the development of the loom in the Old World with its progress in America. Hooper's admirable paper, already cited, makes this quite easy in summarized form. The great similarity of spindles had already been noted. (See fig. 2.) In Europe, as in America, bast is the earliest fiber found in use: the Swiss lake dwellings have yielded numerous fragments of linen cloth, plain woven; but of the loom employed we are told little except that weights have been found, indicating a free-hanging, weighted warp. Egypt too used linen in early times, and on a true loom, vertical, identical in all chief particulars with the vertical loom of the Southwest. (See fig. 4.)

[20] There is at least a suspicion that the broad vertical loom was used in pre-Columbian Peru. O'Neale and Kroeber (p. 29) mention a textile 47 1/2 inches wide, and several more than 40 inches wide. I have seen several of more than 40 inches, including one of 48 inches, in various museums. That is rather an awkward width for waist loom weaving, but we cannot say it is impossibly wide. Archaeology eventually will settle the point.

Perhaps most interesting of all is the loom on which Penelope wove the funeral pall of her father-in-law Laertes, while awaiting the return of

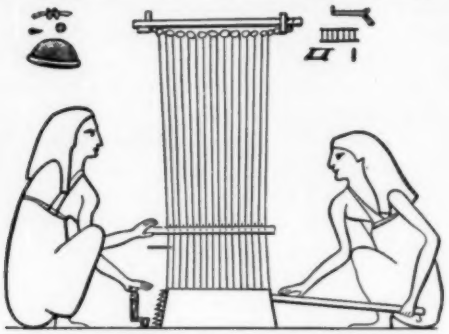

FIG. 4. Egyptian vertical loom. After Hooper.

Ulysses, as depicted on a Grecian vase of about 500 B.C. (See fig. 5.) It is very much like the proto-loom of the Chilkat blanket. The warp hangs free, weighted at the lower end, and the fabric grows downward from the top. Whether Penelope had the benefit of heddles is not clear; probably she used long slender needles, as in the Peruvian needle loom. At any rate, she has achieved a complex pattern which is not suggestive of twining.

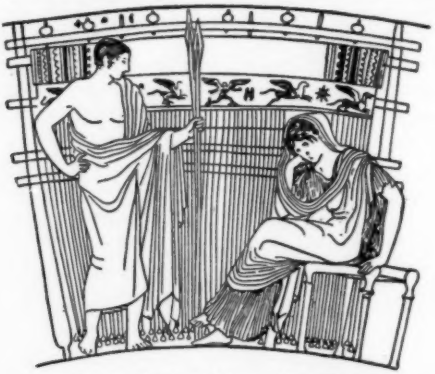

FIG. 5. Penelope's loom. After Hooper.

Even this brief sketch will have shown that the principal weaving devices of the two hemispheres bear a remarkable similarity; but of their independent origin there can be no doubt. It is hardly likely that more than the bare outline of the development of the loom can ever be revealed in Europe.

In America, however, thanks to the aridity of such important archaeological areas as the Peruvian highlands and the Southwest, there is good hope of recovering the whole story, apart from the fact that in North America today primitive weaving processes are in actual practice which exist not even in the memory of man in the Old World.

True Loom Distribution in North America

The distribution of the true loom in aboriginal North America is another point of interest. The existence of the waist loom among the Aztec has already been noted. Holmes (1884) figures forty-four examples of textile impressions: from the Southwest, the Mississippi Basin, and the Eastern Woodlands. Only five of them could have been loom woven; the rest are hand twined, or are basketry fragments. Of the five, one is from Utah (prehistoric Pueblo), one from Ohio, one from New York, two from Tennessee. One of the latter is twilled, the only twill in the lot. This evidence, slender but extremely extensive, associates the true loom with the higher cultures of the region now the United States—the prehistoric Pueblo and the Mound Builder, notably. It indicates further that in so far as Holmes' material is characteristic of conditions prevailing among the makers of his pottery fragments, true loom weaving was in a very small minority in comparison with the various hand techniques revealed by the pottery impressions.

Holmes mentions elsewhere (1896, p. 11) that "spindle whorls have in rare cases been reported from southern localities." Finally, among the scant bits of evidence of true loom distribution in aboriginal North America, we have an inkling that something very closely approaching the true loom was in use by the Cherokee. Holmes (1896, pp. 23–24) quotes Adair as follows:

> Formerly the Indians (Cherokee) made very handsome carpets. They have a wild hemp that grows about six feet high, in open, rich, level lands, and which usually ripens in July; it is plenty on our frontier settlements. When it is fit for use, they pull, steep, peel, and beat it; and the old women spin it off the distaffs, with wooden machines, having some clay on the middle of them,[21] to hasten the motion. When the coarse thread is prepared, they put it into a frame about six feet square, and instead of a shuttle, they thrust through the thread with a long cane, having a large string through the web, which they shift at every second course of the thread.

This shifting at every second course of the thread suggests that the "large string through the web" was in fact a heddle of the most rudimentary and simple form. The "frame about six feet square" may have been a broad vertical loom, having a framework of posts, like the loom of the Southwest. The whole description inclines one to believe that here is a true

[21] The common type of spindle is easily recognized in this description.

STEPS IN THE DEVELOPMENT OF TRUE LOOM WEAVING

	Device		*Product**		*Material**	*Occurrence**
Downward Weave†	1. Supporting stake	Free Warp	Fine woven basketry	Wild Material	Sea grass	Aleutian Islands
					Cedar root	Northwest Coast
	2. Suspending cord (pl. 1*a*; fig. 1)		Twined bags		Buffalo hair	Great Plains
			Sandals (?)		Apocynum, yucca	Basket Maker (?)
	3. Matting frame (pl. 1*b*)		Mats, bast fabrics		Barks, rushes	Mississippi Basin
						Northwest Coast
	4. Weaving frame		Chilkat blanket		Wild goat wool, cedar bark	Upper Northwest Coast
	5. Rigid-warp frame (pl. 2)		Salish blanket		Dog wool, fine fibers, down	Salish of Lower Northwest Coast
Upward	6. Needle loom (fig. 3)	Fixed Warp	Narrow fabrics	Domestic	Andean camel wool, cotton	Peru, Tiahuanaco Period
	7. Heddle or true loom (fig. 4)		Blankets, sashes etc.		Cotton, domestic wools	Peru, Middle America, Pueblo, Mound Builders (?) Navaho

* Product, Material, and Occurrence, are typical rather than inclusive; the list could be lengthened by further research.

† The close correspondence of the bracketed groups will be noted, as they fall into two divisions: first, downward weave, free warp, and wild material; second, upward weave, fixed warp, and domestic material.

loom of the simplest form possible, one which employs a bast (probably a species of apocynum) instead of a true wool. Was it an independent development, or a borrowing from the loom presumably developed in Peru or Middle America? Another point for the archaeologist's attention.

Viewing the textile development of aboriginal North America in general, in so far as our scanty knowledge permits, one gets the impression that everywhere experiments and developments were in process that were tending inevitably toward the loom, in most cases quite independently of one another. Some sort of device to facilitate weaving is found nearly everywhere. A variety of basts were in use, ranging from very coarse to very fine. Both hair and wool were frequently employed, and spinning had developed its own special technique and accessories. The Salishan peoples had progressed to the point of using a rigid warp in plain "basket" weaving—but they knew not the heddle. Of true loom weaving there is no definite evidence until cotton seemingly sweeps northward from "somewhere south." On the crest of that wave, to all appearances, rode the true loom.

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FEASTS IN NEW IRELAND; THE SOCIAL FUNCTION OF EATING[1]

By HORTENSE POWDERMAKER

EATING has an important social function among any people. Groups of people eating together on a particular occasion, whether it be a mortuary feast in a primitive society or a birthday dinner party in our own culture, illustrate the point that eating is a social institution as well as an individual physiological necessity. In the primitive society of New Ireland, social life in its ritual, and in many of its non-ritual aspects also, centered around feasts. This term includes not only those occasions when food is eaten communally, but also when it is only distributed, and in this paper denotes any communal rite (and non-ritual occasion) centering around food. The two most important communal events are dances and feasts. Only the latter are being considered in this paper.

Social Function of Eating

The communal eating of food and customs concerning it may be said to have a double social function: (1) to maintain the cohesion of the society and of groups within it; (2) to determine, in part, the relation of the individual to the society and to the smaller groups within it. The psychological theory underlying the first function is that society maintains its existence by a system of sentiments which are given collective expression on ritual occasions.[2] In this society the most frequent of these are feasts.

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[1] This article is based on an ethnological study of a Melanesian society on the island of New Ireland in the Bismarck Archipelago. The author lived for ten months in the village of Lesu (phonetic spelling; the spelling on government maps is Lossu) on the east coast about eighty miles from the northern end of the island, and attempted a rather intensive study of a relatively small group of people, one linguistic unit of five villages each with a population of between two and three hundred, covering an area of ten or twelve miles. The research was conducted under the auspices of the Australian National Research Council, and the author is now preparing the material for publication as a Fellow of the National Research Council (United States), under the sponsorship of Dr. Clark Wissler.

[2] Professor Radcliffe-Brown has expounded this theory in The Andaman Islanders (Cambridge, 1922). He says pp. 233, 234: "(1) A society depends for its existence on the presence in the minds of its members of a certain system of sentiments (an organized system of emotional tendencies centered about some object) by which the conduct of the individual is regulated in conformity with the needs of the society. (2) Every feature of the social system itself and every event or object that in any way affects the well-being or the cohesion of the society becomes an object of this system of sentiments. (3) In human society the sentiments in question are not innate but are developed in the individual by the action of the society upon him.

Members of the society come together at a feast to welcome a new member, to mourn the loss of an old one, to mark a change in the social status of the individual through circumcision, menstruation, or marriage, to note the return to the society of a member after a temporary withdrawal through illness, and before a communal enterprise such as war. Should there be a rift occasioned by a quarrel, it is the coming together over food that mends it.[3] On all these occasions society manifests its unity. While the rites vary according to the event, food is a common denominator of all of them.

The feast provides not only an opportunity for the society to express collectively those sentiments which maintain its existence, but it also serves more concretely as the occasion for the transaction of much of the business and social (apart from ritual) life of the community. It is at the feasts that trade is carried on. Payments are made for objects and services, and future trading operations are arranged. On the same occasion individuals and groups exchange gifts. A feast also frequently becomes a meeting where matters of importance are discussed. Finally, it is a sociable occasion for both sexes, when jokes and gossip are exchanged.

The second function affects the relation of the individual to his group and the relation between several individuals. The native's explanation of why he gives a feast is that he must do so to gain prestige. Rather does he put it in a negative way, that, unless he gives a feast on any of the occasions which demand one, he will be a person of no account: everyone will talk about him in a derogatory fashion, saying that he has no food or wealth, and is not able to give a feast. To a native this kind of gossip is most noxious; a lowering of his prestige must be avoided at any cost, and the number and the size of the feasts he gives are most important in affecting his position.

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(4) The ceremonial customs of a society are a means by which the sentiments in question are given collective expression on appropriate occasions. (5) The ceremonial (i.e., collective) expression of any sentiment serves both to maintain it at the requisite degree of intensity in the mind of the individual and to transmit it from one generation to another."

Professor Radcliffe-Brown has applied this theory to Andaman society and has described the various ritual occasions in the Andaman society which serve to maintain and strengthen these sentiments. He has not, however, applied his theory or mentioned it in connection with feasts. His theory of the social value of food is that "food is a possession of the society, that not only the power to obtain food, but also the power to use it without danger is something that the individual owes to society, and that the bestowal upon him of this power involves the acceptance on his part of corresponding obligations" (p. 278). This theory deals with the social value of food itself and how society overcomes the danger resulting from the social value. The above article is concerned with quite a different aspect, namely, the social function of eating.

[3] This is just the final mark that the quarrel is over. Preceding the feast there is an exchange of ʻsarγ (currency) between the two disputants.

Around food also is focused much of the prestige of an individual in his family. Here a man's standing is largely dependent upon his ability as a food provider and the woman's upon her industry in preparing the food. Failure on the part of either partner to fulfill these obligations is sufficient cause for a divorce.

Social Organization

Before describing the feasts and showing the way in which much of life centers around food, it is necessary to give a very brief description of the essentials of the social organization. There are two exogamous moieties, the Eagle and the Hawk, which are subdivided into clans. Descent is matrilineal, the clan consisting of an extended family, all related through the female line. The next kinship unit in order of size is the individual family, which may be monogamous, is frequently polygamous, and occasionally polyandric.

On the basis of locality the largest unit is the village. In the district where I lived there are five villages forming one linguistic unit. This is not and never has been, as far as I could observe, a political unit. In the past, warfare was frequent between the villages and there neither was nor is one chief for all of them, each having its own. The village is subdivided into hamlets,—Lesu into fifteen. Residence is matrilocal and so a hamlet will usually have many female members of the same clan. The hamlet has from two to seven or eight houses, each one having its communal cooking ground and generally a cook house also, for use on rainy days. With the exception of the very small ones, a hamlet has its own cemetery and men's house.

The society is agricultural. Gardening, fishing, hunting wild pigs, and cooking are the main everyday occupations. Trading is important and carried on according to exact and traditional rules. The familiar Melanesian gift-exchange is also practiced.

Frequency of Feasts

After living in this society for only a short time, one is impressed by the great frequency of feasts. The following is a list of occasions on which they are held.

Occasion	Name
Pregnancy	ɑnːng asːl tsɛgɣ (eating for infant)
Birth	Grːmɣsi (name of dance performed by women at this rite)
Giving name to infant	Basisis (name)
Several months after birth if infant is strong	ɑnːng asːl wɤtwɤt tsegɣ (eating for strong infant)

At appearance of first tooth	ɑnɪng asɪl nuji (eating for tooth)
After ritual washing of a girl at her first menstruation	tsɪ tsɪl (name of leaf used in washing)
Marriage	mɑrɪl (name of playful fighting occurring between women of opposite moieties at this time)
Circumcision	Lual ɪnγ tsɛ saukγ (feast for cutting penis)
Recovery from illness	Bis Bambullγ (make taro die[4])
Going away a long distance	ɑnɪng atγbasiγɑp (eat and go)
Feast at death	KosɛrγLual (Make feast)
Feast some time after death has occurred	KosɛrγLual mau tungän (free translation: make feast for dead; literally, implies feast is held on ground where men are buried)
Malanggon[5] rites	KosɛrγLual (make feast)
To make arrangements for future malanggon rites	äginlɛnɪt bul (mark pig)
To end quarrel	lɛmbii (finish)
Before war[6]	Lual tanta bul mɑrɪl (feast to bring fight)
To make peace between warring villages	lɛmbii (finish)
Feast given for possible mates of female infants	ɑnɪng tsɪng tsɪl (eating play)
When there is abundance of food	ɒnγnɪn aLɒt (food much)
To repay women who helped an ill woman	ɑnɪng oba (eating, communal work)
To repay workers on a house or garden fence	ɑnɪng oba (eating, communal work)
At completion of my house[6a]	ɾsɪali anuγ (open house)

During the ten months of my visit I attended eighty-five feasts, a large majority of which took place in the village of Lesu. The others occurred in neighboring villages, but were also attended by Lesu people.[7]

The eighty-five feasts fall into the following classes:

Feasts at death	9

[4] The tops of this taro are thrown away and not replanted as is usually the case.

[5] Malanggon is the name of an elaborate carving displayed at certain mortuary rites.

[6] Warfare has been abolished by the mandated government and the feasts connected with it are therefore no longer held. The feast before war and the one to make peace between warring villages are the only ones on the list which were not held during my visit.

[6a] This feast was called by a different name from the one ordinarily used to repay the workers on a native house, and is really an introduced element in the culture.

[7] Not included in this number is the communal eating on the part of the men every day for several weeks after a death. These might well be considered ritual feasts, but I have included only those which mark a very specific occasion, such as those in the foregoing list.

After death feasts.....32
Nineteen of this number were connected with the display of malanggons.
Circumcision rites[8].....8
In payment for economic services.....5
These were to repay workers who had built a house or made a garden fence.
Women's feasts.....11
Those at which the women eat or where the food is distributed to them. The latter is the more frequent occurrence. The men do not eat at the women's feasts. They may be further analyzed as follows: birth, 4; pregnancy, 1; circumcision, 1; menstruation, 1; marriage, 1; malanggon,[9] 1; end of dance rehearsals, 1; payment to women who had helped a sick woman of opposite moiety, 1.
Miscellaneous feasts.....20
These are subdivided as follows: abundance of some particular food, 9; baby cutting his first tooth, 1; giving of name to infant, 1; recovery from illness, 2; settlement of quarrel, 1; because infant is strong, 1; for possible mates of infant, 1; end of folk-tale telling period, 1; for my departure, 1; for my servant's departture, 1; just sociability, 1.

At the far end of the village, other minor feasts probably occurred which I did not record or witness. The number of people attending ranged from twenty to five hundred.

Preparations for a Feast

Preparing for a feast is a communal enterprise. Early in the morning of the feast, or the day before if it is a big one, the women of the hamlet, village, or several villages, depending on the size of the feast, bring their taro to the communal cooking ground or cook house.[10] They and the girls old enough to be of assistance immediately begin the work of scraping and preparing the taro to be baked. Their only implement is a shell called ʻsip, with which they scrape the skin from the taro. The scraped taro is then wrapped in leaves. The women are quite ingenious in cooking, and there are a number of ways in which this general method is varied. Shredded coconut may be added, or the taro may be cut in a certain manner, or the inside may be scooped out, etc. The women sit in a group on the ground, working busily and seriously. A few men are off on one side tending to the liga, a pile of hot stones on which the food is to be baked. A fire is made to heat the

[8] At these circumcision rites malanggons were displayed. So the rites really had a double function—mortuary and circumcision.

[9] Men ate at this feast, too, but separately from the women.

[10] The principal foods are taro, fish, crabs, pigs, bananas, coconuts, and pawpaws, supplemented by yams, sago, turtle, etc. Taro is the staple article of diet, and its preparation is the main work both of family meals and feasts.

stones, and when these are hot they are leveled and the food put between them. Leaves and sand are then put over it, and the food remains there until it is baked. Men are working in groups of two or three, but not very continuously, wrapping a fish or a pig in leaves preparatory to baking, or bringing in leaves from the bush to wrap around the food. Their work in this connection is never as steady as the women's work. A man may tend to the liga and then loll around for a half hour or more, until there is something else to do. Frequently the men will take care of the babies, while the mothers scrape the taro. The main work of cooking falls upon the women; although the men do assist, this does not break into the sexual division of labor.

When the women have finished preparing the taro (for a big feast this takes at least three or four hours), and after it has been placed in the liga, the ground on which they have been working is cleaned and they take their ease. Until now they have been working seriously and without stopping, except perhaps to nurse a baby. There has been no talking except for the necessary remarks about the taro. Now they sit in the same place smoking their pipes and chatting. Gossip is exchanged, jokes are told and followed with appreciative laughter, and here and there a woman is engaged in the pastime of searching for lice in a friend's or relative's hair. If a woman of the village has just become pregnant, there will be playful fighting between the women of the opposite moieties. This part of the pregnancy rites occurs whenever there is a group of women present. The men in the meantime are a short distance away, on the beach, in the compound in front of the men's house or some other house, in groups of two or three, smoking and chatting but not in any large group. This period—while the food is baking in the liga—is an easy, convivial, feminine communal occasion, as is the eating which follows for the men.

Description of Feast

Three or four hours later, when the food has been baked, the men and boys carry it in their hands into the cemetery. For the men the cemetery serves as a banqueting hall and most of the men's ritual feasts are held there.[11] Women are never permitted in the cemetery for a feast, or at any other time, except at a burial, and then they leave immediately after the interment.[12]

[11] The economic feasts in payment to workers are not always held in the cemetery, and the malanggon ones are held in a special structure erected for them. The connection of eating in the cemetery with mortuary beliefs must be considered at another time.

[12] However, I was invited to all the feasts, and the invitations were always accepted.

In the cemetery the food is eaten with traditional etiquette. The men sit on the ground around the sides of the cemetery. At one end is the pile of food and near it the host or hosts. The bundles of food are opened by the host usually, and then it is customary for him to make a speech, explaining the reason for the feast and mentioning those who have contributed food to it. Several young men act as "waiters" and place a banana leaf on the ground in front of each man, or sometimes one leaf for every two or three men. Then the waiters evenly distribute the food on these leaves, each one getting exactly the same number of taro, bananas, etc. A "waiter" takes as many taro as he can hold and puts about three on each leaf and then he takes another lot and distributes them, until they are evenly divided. At a highly ritual feast, which I attended, for the display of malanggons during circumcision rites, ten men acted as waiters, advancing in a line to the pile of food, picking it up in unison, walking to the leaf plates, and then after waiting for a signal from one of the hosts, put the food down at exactly the same moment. The signal was: "Arurini la pʋllγ" (Put it on ground).

No one ever begins to eat until all the food has been apportioned. At the feast just mentioned a second signal was given for this. The two hosts walked silently the length of the enclosure in which the feast was being held, each holding a small pig's bone. The guests were silent. Then the hosts threw the bones away and the eating started. At less important and less formal feasts this signal is frequently omitted, but even then no one ever eats before the "waiters" have finished their work of distribution. Then the guests eat, but not the host. It would be considered very bad form for a host to eat at his own feast.

Trade after the Feast

When the men have finished eating, business affairs of varying nature are conducted. If pigs have been eaten at the feast, payment is now made for them. A string of ˈsɛrγ (shell currency) is held up by the man giving the feast and he says to whom he is paying it and what for. Then the ˈsɛrγ is handed over to the seller of the pig. Should the occasion be a very big feast at which many pigs were consumed, this payment will usually be made outside the cemetery, where the ˈsɛrγ can be given to the women owners of the pigs as well as to the men.

Any other payments due are made at this time. Should a man have purchased a dog, he now makes the payment to the former owner. Preparations are also made for future trading arrangements. One feast was held particularly to arrange for the purchase of pigs to be used at malanggon rites ten months later. The people who would sell their pigs for these com-

ing rites were given bundles of baked sago. The chief called out their names and the sago was given to them. This "marked" them as those who would sell pig for the future rites. The names of some women were called, and when the feast was over they came up to the cemetery to get their sago.

Gift Exchange

The feast is not only the time for payments and arrangements for future trading, but also for gifts. Usually not all the pigs are consumed at the feasts, and large portions, a head or half the body, will be presented to some one present. Sometimes this is a return gift for a present of half a pig which had been made six months ago, or perhaps it is a new gift to a man, who will return it at another feast. The gifts are always made ceremonially, the name of the recipient being called, and then the piece of pig is handed to him by one of the "waiters."

Discussion

At the end of the feast other matters of importance and current interest are discussed. If dance rehearsals are in progress, one man will make a speech exhorting the men to dance well and to practice rigorously. Or the chief may map out plans for a coming big feast, that is, when they will bring in the bananas to be buried in the sand,[13] when they will fish, what day the women will prepare the taro, etc. Or perhaps, as happened at one feast I attended, the weather was the subject of discussion. The rainy season (time of northwest monsoon) had begun, and for several weeks there had been a deluge of rain. Everyone was disgusted at having to slide about in the wet mud, and much more serious was the threatened danger to the taro crops. After the men had finished eating, the old and rather famous rain magician, Bullagot, made a long speech, encouraging the men and telling them that the excessive amount of rain was due to the magician of a neighboring village, but that he would counteract this by making his own magic to stop the rain. He was followed by other old men, all making speeches of a similar nature, exhorting people not to be downhearted, saying that Bullagot would stop the rain. The younger men listened and were impressed. It was not unlike a Biblical scene where the ancient prophets encouraged the people in a time of famine or other hardship.

Occasionally a concluding speech is made, although this does not happen very frequently. At the feast to make arrangements for buying the pigs for the future malanggon rites, the chief made a concluding speech, during

[13] Bananas are buried in the sand on the beach about a week previous to a feast. The resulting banana is very soft and squashy.

which he walked up and down singing and talking. He gave once more the reason for the feast, said they had now "marked" all the pigs, and then made a few more remarks about the size of the animals and the number of men present.

Finally, each man makes a rude coconut-leaf basket in which he carries home the remains of his food. But before they leave, the men carefully clean the cemetery and throw all debris into the sea, near which the cemetery is always placed. Not a scrap of food nor any other refuse, such as a leaf "plate," remains, the cemetery being left in the same neat condition that it was in before the feast. This work done, hands are washed in the sea (the sea as a finger bowl is one of its many uses for the native), and then the men drift away singly or in small groups, each carrying his basket with the remains of the food.

Reciprocity Between Moieties

This ritual feast, held on all occasions of importance to the individual or to society, is also frequently the time when the principle of reciprocity between both moieties and localities is seen in full play.

At the feminine feasts, such as pregnancy, birth, first menstruation, and marriage, where there is a distribution of food, the women of the Eagle moiety bring taro which is given to the women of the Hawk moiety, and the women of the Hawk moiety likewise bring taro which in turn is given to the women of the Eagle moiety. This exchange is never omitted. The Eagle women bring their taro, prepare it for baking, and then place it in the liga themselves. They do not forget just where their bundles have been placed. Removing them from the liga, they give them to the women of the Hawk moiety, who do likewise to the women of the Eagle moiety. The taro is of course all exactly the same and prepared in the same fashion, so that one gets exactly what one has given. But it is the ritual exchange between the moieties that is important. At some feasts uncooked taro is exchanged. At the feast, when the men eat, this act of reciprocity does not take place among them: the food is opened up in the cemetery and the taro is distributed regardless of moiety.

Reciprocity Between Villages

It is the uncooked taro that is most often the object of exchange between the women of different villages at intervillage feasts—usually mortuary and malanggon ones. Sometimes the exchange does not always take place at the one feast. The women of Lesu may go to a feast at Ambwa, three miles away, and receive much taro. At a later time the women of Ambwa will come to a similar feast at Lesu and receive taro as a return gift.

At other times the exchange may be effected at the same feast. In the same way, men of Libba will eat at a feast at Lesu, and later the Lesu men will eat at a Libba feast. A feast thus provides the occasion when both individuals and groups pay off their obligations.

Feminine Speeches about Husbands

At the ritual feasts of circumcision, birth, and marriage, another custom is given an opportunity for expression. At these feasts it is customary for the women to make speeches about their husbands, as good or bad food-providers. The food is arranged in two piles, one contributed by the Eagle moiety, and the other by the Hawk. The Eagle women come on the scene together, each brandishing a masculine implement of work—a fishing net, a spade, etc. They circle around the pile of food contributed by the Hawk moiety, each woman in turn holding up a tool and making a speech about her husband. If she carries a net, she talks about his industry in fishing and how he very often brings her fish. Or she may say the opposite,—how lazy he is. Each woman makes her speech, and the "audience," male and female, listens to it with quiet appreciation. There are grins and chuckles during a speech about a lazy man, while he hangs his head in shame. When the women of one moiety have finished, the other women enter and go through the same procedure. The speeches show very clearly how much the man's prestige in his family depends upon his ability as a provider of food. These ritual feasts give the women the opportunity of publicly praising or blaming their husbands and they never let it pass by.

Daily Meals

Feasts are of course not the only time when natives eat. When they get up at sunrise, they will eat a cold baked taro left over from the day before. But this is not a meal. The man will often munch his taro as he strolls about the beach, while the woman will eat her's casually as she tidies the house or collects her implements, baskets, etc. to go to the garden. In the middle of the afternoon, when they have returned from the gardens, if hungry, another cold baked taro will be eaten casually. But after the sun has set there is the family meal. The food for this is sometimes prepared by the wife, or wife and daughter together, and at other times the women of the hamlet may cook communally. The baked food is later taken to each individual household. There, in the open compound in front of the house, each family gathers around the fire and partakes of the common meal. Certainly this meal emphasizes the unity of the family and tends to foster those sentiments which hold the family together—just as the feasts keep alive the sentiments binding larger groups.

Other Customs centering about Food

There are various interesting customs which center around food apart from feasts or family meals. These may just be mentioned here as showing the important sociological rôle of food. Betrothal is consummated by the girl preparing some food for the man and their sitting down with the basket of food between them and eating together. In many folk-tales, when we are told that a man and a woman, or a man and two women, sit down and eat together, this expresses the fact that they are married. A woman never eats with her lover.

The remains of food are connected with black magic, and so one is careful never to leave any left-overs about.

Even the ghosts are concerned with food. After a successful fishing expedition a half taro and a small piece of fish is left on the liga for the ghosts of dead clan ancestors whose aid has been asked in fishing magic.

The prohibition of certain foods on particular occasions is the essential part of several taboos. The most important of these is the taboo against eating taro for certain relatives of a dead person over a prescribed period of mourning. During pregnancy a woman may not eat a certain fish. This is one with many bones, and it is thought that they would hurt the embryo child. A pregnant woman will be given a half of a baked taro by a woman who has had children. The latter eats the other half, and this act is believed to insure a successful delivery of the infant.

Food is the most frequent form of gift between husband and wife, between mother's brother and his nephew or niece, between brother and sister, and between friends. It is also an invariable mark of hospitality to offer food to a stranger.

Social Function

From the preceding description it is obvious that feasts in this society have other functions beside the satisfaction of physical hunger. Sometimes there is more than one feast in a day and the men then eat as a duty rather than because they are hungry. One day there were three feasts in near-by hamlets, and all attended by the same men. Two were connected with death rites, and one was to mark the occasion of an infant's cutting his first tooth. By the time the third feast was reached, the men were not hungry, but all ate.

Even the family meal, which has the very definite physiological function of satisfying hunger, has also the sociological rôle of uniting the various members. In a similar way the sentiments binding the society together are given collective expression at the feasts, although the very strong line of sex

demarcation is observed. The general rule for feasts is that the women cook and the men eat.[14] Now if a communal activity strengthens the cohesion of a group, the division of society into two groups on one occasion emphasizes the solidarity of each group. But since each of the two groups are partaking in the same rite, there is no real loosening of the sentiments which bind the whole society but rather a further integration of it. The same rites thus have a contradictory function, in that at them the society is united and at the same time divided on lines of sex.

Summary

Feasts provide the occasions when the sentiments on which a society depends for its maintenance are given expression. The objects about which these systems of sentiments center are in New Ireland, as we have seen:

1. Important crises in the life history of the individual, such as pregnancy, birth, marriage, death, etc.
2. Trade—payments made for pigs and other things that have been sold.
3. Exchange of gifts between individuals and groups, wherein the important principle of reciprocity functions.
4. The privilege of women to make speeches about their husband's industry.
5. Maintenance of the individual's prestige.

About all of these—trade, gift exchange, reciprocity between moieties, crises in an individual's life, economic relationship between a man and his wife, prestige—systems of emotional tendencies are organized, and it is necessary according to the theory described in the beginning of the paper, for these systems to be maintained, strengthened, and transmitted from one generation to another. Feasts are a form of ritual which thus have the social function of impressing upon the individual the sentiments of his society.

Institute of Human Relations
Yale University
New Haven, Connecticut

[14] At seventy-five of the eighty-five feasts I attended, only the men ate.

TOLOWA NOTES

By CORA A. DuBOIS

THE following information was secured during the winter of 1929 from Agnes Mattz, a full-blood Tolowa woman of forty-five, who came from Smith river, north of Requa in California. She was in domestic service in Oakland, California, at the time.

Girls' Puberty Ceremony

The first ceremony lasted ten days, but the elaborate dancing and singing festivities described later were reserved only for the daughters of prominent families.

Ordinary procedure.—The girl was placed under a tule mat within the common dwelling-house. The mat was stretched diagonally from the wall to the floor, forming thereby a shelter or retreat. Under this tule mat others were spread out as a bed. Here the girl remained all day without sleeping. She was permitted to sleep at night but was forced to rise each morning before dawn to bathe. She went to the river with head and body covered by a tule mat. Were she to see the sun she would suffer from weak eyes in later life. For the first three or four days she must fast completely on both food and water. When she ate once more, it was from special containers. Her mother or any other woman who knew the formulae came to pray over her. The informant gave the formula repeated for her on this occasion to the best of her memory:

This young girl, give her food forever, Old Man. May she always eat this food. You are over us, looking at us, every step we make. She is going to eat her food, something which will never make her sick. And you will give her water to drink. And all kinds of berries you will give her. Some berries have worms in them but that will never make her sick. You know that if I did not pray for her and for all her food, she would not live long. You are over us, Old Man, and you wanted to give us all these things when you sent us all to this world, so you must guide this girl.

After a formula had been repeated and the fast broken the girl might eat morning and night only, and she must eat alone. When she broke her fast it was usually on dried smelts, acorns, and blackberries. At this time also a pinch of incense made of wild roots (unidentified) had been placed on a fire made especially for this purpose under the tule shelter. No particular observances were initiated after the breaking of the fast and before the ninth night. At this time the girl's body was rubbed with red clay. On the following morning she bathed and removed the clay.

More elaborate procedure.—The more elaborate ceremony was held for the daughters of wealthy persons. When still children they were pointed

out with the comment, "We are going to 'medicine' her when she gets old enough." The better the care and the greater the ceremony at puberty, the larger the bride price which might be expected later. If a girl were not given an adequate ceremony, it was felt that she would die young. What differentiated the elaborate puberty ceremony from the ordinary one was the dancing and singing which took place nightly and the accompanying feasting. The dancing was done chiefly by the boys and girls. No married or divorced woman was permitted to join. The girls must have passed puberty. No information concerning the boys was obtainable. It is uncertain whether dancing took place in the girl's house or in the village dance house. In any case the girl was present but in concealment under tule mats. On the first night only a few dancers and singers attended the girl. The numbers increased until finally on the ninth night the climax was reached. The dancers were told to sleep in the early evening. They were then awakened and told to bathe. After bathing, the girls put on their best clothing which consisted of a deerskin apron and cape, beads, bracelets, anklets, etc.; they were painted with red and black pigment. Untattooed girls had their chins decorated with three stripes of finely powdered charcoal mixed with deer fat to imitate real tattooing. The hair was twisted into two strands with strips of fur, and a strand hung over each shoulder. Two feathers were inserted into the base of the strands at the back of the head, and a basket hat was then worn. The boys also wore their best clothing, which consisted of a fur apron from the waist to the knees, woodpecker head-bands, etc. First the men, ranged as to height, entered the house dancing. The girls, similarly ranged, followed and danced to alternate places between the boys. They formed a semi-circle. The musicians were seated in two corners of the house back of the dancers. The informant recalled that six different songs and dances were performed in connection with the puberty ceremony. However, the songs were sung at any time and no particular feeling of sacredness seemed attached to them. Between dances dried fish and acorn soup ("which makes you sing good") were furnished the performers. They were at liberty to rest, even to go home for a time. Also between dances prayers were said for the girl that "she might have a long life and have everything nice."

At dawn the dancers descended to the river whirling as they went and stripping off their clothes on the way. They were followed by the rest of the villagers, who recovered their clothing for them. It was considered very bad luck to make a misstep or fall in the descent to the river: this would shorten one's life. On this tenth morning a man, whose status was not obtainable, took the adolescent girl out from her tule shelter. She was dressed in a very full skirt of shredded tule, and a mat of the same material was

wrapped around her. She should also wear a cap of yellowhammer feathers, which would almost entirely conceal the face. She was led out and placed beside the fire. The man who officiated sang and shook her back and forth five times. The tule clothing was then removed and replaced with her ordinary dress. A child of six or eight who had been standing near her then preceded her in running down to the river. The girl jumped in, bathed, and returned to the fire. This was done ten times. She was then considered "all clean" and was "free." After this final observance which terminated in the middle of the morning there was a big feast. The father did not bear the burden of it alone. Various families charged themselves with the guests. Friends of the father helped in supplying food and wood throughout the ceremony. The fire for dances must be built of wood which did not crackle in burning.

The preceding ceremony, both in the simple and the elaborate form, was repeated for the three successive menstrual periods, i.e., there were four ceremonies all together. Then a girl was considered a woman and ready to marry. Associated with the four repetitions of the ceremony were two methods of keeping count. A yellowhammer feather with four black bars on it was passed through the pierced septum of the girl's nose at the time of the first ceremony. At the second repetition a feather with three bars was used, and so on until the last performance, when one bar was used. The second method of keeping count was to hang around the girl's neck a small circular basket in which four basketry disks were laid. One disk was removed after each ceremony.

Throughout the cycle of ceremonies a number of observances were rigidly held by the girl. She used an abalone shell head-scratcher; to use her own fingers would produce baldness. She ate apart and from her own dishes, which no one else might touch. She bathed after each meal, that is, twice a day. She wore a distinguishing face marking which consisted of two diagonal lines on either side of the bridge of the nose and one diagonal line on each cheek-bone. They were painted on in charcoal mixed with deer fat. These practices, in addition to seclusion, marked the girl off from the rest of the inhabitants of the village during the four months of puberty observances. Girls were frightened into taking meticulous care of themselves by being told that otherwise they would develop ill health later in life, and more particularly that they would have their flesh destroyed by worms. The informant stressed the tediousness of the personal care involved during this period, but seemed to feel that a compensating distinction resulted therefrom. She further commented on the strangeness of such a distinction accruing to girls at this time when boys had no parallel ceremonies of equal importance; yet men on the whole, she felt, were more important than women.

The septum of the nose was pierced before puberty. The informant reported that her mother called in an old woman to do it to her "so that I would be ready when I got sick the first time." The septum was rubbed and worked between the thumb and forefinger with warm water in order to soften it. Then a smooth redwood needle was thrust through the dividing cartilage.

Ear-piercing was done after puberty and seems to have had no significance other than making possible the wearing of earrings which "make you look pretty at a dance."

Tattooing also occurred after puberty and seems to have had no connection with it. It was purely decorative. The informant had only a small spot on the inside of her forearm which her sister had made in play. She reported, however, that her mother had three stripes on the chin running from the lower lip, one dot above each corner of the upper, and a band on the wrists and ankles. Tattooing was done in the usual fashion. The flesh was lacerated with a splinter of obsidian, and a paste made of water and charcoal (gathered from the earth lodge) was rubbed into the wounds. The operation often caused such painful swelling that eating was practically impossible for several days. Men tattooed only the ankles and wrists. This was optional. Dentalium measurements were marked on their forearms.

The hair after puberty was cut in bangs on the forehead. Also strips reaching a little below the ears were cut. When a woman was married the hair was permitted to grow again.

Boys' Education

Boys of eleven or twelve, who were still "clean," were taken deer-hunting for the first time. Thereafter they received careful instruction in the care and safe-keeping of bows and arrows. The first time a boy brought food for the household was considered lucky. A woman of the family made him a new shredded tule apron for the occasion. The first time he speared a fish the same thing was repeated. But after this no notice was taken.

As in many Californian tribes, to be brought up by a grandmother was a great asset. As the informant expressed it, "If a boy is brought up by his grandma and believes everything she says, he gets to have good sense, he knows everything, he talks the same way to all kinds of people no matter what kind of clothes they wear." This last statement was an interesting commentary on the democracy of manners among the Tolowa despite emphasis on wealth.

Naming

There were both real names and nicknames. Real names were used more than the latter. They were given at any age, and a person might have more

than one. Name-bestowing entailed festivities. Everyone assembled, then the person who was to confer the name entered and pointing at the one to be named said, "What? Is So-and-so here? I see him sitting here." At this everyone laughed heartily. Then the guests were feasted.

There existed also the name taboo for deceased persons. Breaking it was atoned for with a money payment. Not only the immediate family but also collateral relatives were entitled to consideration in this respect and could demand indemnification.

Marriage

Bride purchase existed but with the usual compensatory gifts from the girl's family. A bride was usually chosen by the man's parents. The two young people might never have seen each other. This careful control of marriage applied particularly to rich families. The bride went to the groom's home or the groom and his family went to the bride's. She appeared richly dressed with many strings of shells around her neck. Divesting herself of her rich clothing and ornaments, she presented them to the mother-in-law. If a bride failed to make this gift, she and her children were looked down upon. The informant felt that the bride's gifts might be large but rarely equaled even half of the bride price. One hundred dollars was a very large payment for a bride.

The bride price was not returned even though the woman died childless. If a man died leaving a woman childless it was felt to be a great tragedy. If a couple separated, the husband was entitled to ask for the return of the bride price. The woman's father usually demurred, especially if there were offspring. He refused on the grounds that "it would be as though his grandchildren had come out of the ground," i.e., it would reduce the children to the status of bastards. Sometimes in such cases part of the bride price was returned but seldom all of it.

After the exchange of bride price and gifts, the couple might reside either patrilocally or matrilocally, but the ideal situation was to establish a household of their own. Households therefore roughly consisted of the biologic family. The house in which the informant was brought up contained her mother, father, sister, her sister's husband, and their five children, i.e., it sheltered ten persons. The informant felt this group to be somewhat larger than that in the average household.

Theoretically, bastards were not tolerated. According to the informant the child was thrown in the river. "We don't want that kind of child in our place."

Eschatology

The burial customs are given approximately in the words of the informant.

Indians are afraid of the dead. They must not be taken out of the regular door. That is the way the living go out. The dead have gone to a different country and they must travel a different road. The boards of the old houses weren't nailed. The walls were just boards stuck in the ground. So they took out a couple of boards. After the body was wrapped in tule mats they carried it out through the opening. It was carried to the graveyard. There the body was washed. It could not be washed in the house because it might leave uncleanness there. One person, a man or a woman, went to the river to get the water to wash the body with. He was followed to the river and back by a young person. Beads and money shells were put on the body. If it was a woman, she was dressed in her deerskin dess. Her hair was left unwrapped and hanging over her shoulders. Shells and baskets were piled on the grave when it was being filled. Then everyone went to the river to bathe.

When a woman's husband dies she shaves her hair. If she remarries or has a lover she lets it grow. If her hair is kept short it shows she is a good woman and hasn't known a man after her husband's death.

The bereaved burn the property of the dead in order that they may not suffer reminders of their loss. Burning took place at the time of burial. Theoretically, all valuables should be destroyed, even boats and paddles. This produced such a conflict with Tolowa emphasis on wealth that actually valuables were often purified instead and then used by relatives. The article was washed with a paste made from a root whose name was unknown to the informant. Pepperwood leaves (bay?) and salal berry leaves are also purifying agents. Objects were rubbed with them and laid aside for a month or two. Today houses are still purified after illness or death by burning salal berry leaves and pepperwood leaves, filling the house with their smoke and then brushing everything off with the same kind of leaves. This also prevents illness.

"Almost all dances make people feel badly because the people who died aren't there to enjoy them." Certain clothes were kept for dances and worn commemoratively. When a wealthy man or woman died he might say, "Don't bury these clothes, but take them out and wear them when you have a party."

Position of Women and Division of Labor

A premium was placed on a woman's capacity for work. When a man thought of buying a wife he looked to see if her hands were rough and scratched. If they were, he was convinced of her industry. Women were

required to carry out all the food-gathering activities connected with acorns, greens, seeds, etc. She was responsible for making tule mats, weaving baskets, etc. Twice a day she went for water. Women dried fish. One of their most arduous tasks was collecting wood. This might entail crossing the river in canoes to a spot where the firewood had not been exhausted. The canoe was filled and returned to the settlement. The wood was then placed in baskets and carried with the aid of a tump-line to the houses. Fires were kept burning constantly, and keeping them supplied with fuel was heavy work. If a fire went out, new fire was borrowed from a neighbor. The informant with an air of grievance said that men lay in the sweat-house all day while women worked very hard. Actually, however, the men shared in economic support by fishing, sea lion and deer hunting, canoe making, etc.

Furthermore women treated men with much respect. The informant made the statement in the following manner.

No girl must ever walk in front of a man or boy. It is awful. If you walked in front of them people would say you weren't brought up right. Parents had to tell girls all these things, especially how you have to act about men.

Women must have meals prepared when men returned home. They must be quiet while men ate and only after the men were through might the women eat. In the presence of men they sat decorously with their knees folded to one side under them. Men often used low wooden stools but women did not.

Girls were reported to have played in the sweat-house during the absence of men, and women were allowed to enter it to witness the women's shamanistic dance. But as a rule women avoided it. The men were accustomed to sleep there. The practice was to shut all openings and strip off clothing before going to sleep. A "sweat" was made every morning and evening and the heat lasted twelve hours.

Social Ranks

Chieftainship was hereditary in wealthy families. A chief was an individual of outstanding wealth. "He didn't hunt or fish like the rest; he was so rich he didn't have to. Sometimes he was so rich that he had ten wives. All his sons were looked up to because they came of a good family. One of the sons would become the headman but there was no way of telling which would be chosen."

Sometimes the chief adopted or bought poor boys to work for him. They had to get food, carry wood for the sweat-house, and perform other similar tasks. The boys so adopted or bought were sons of poor people. "Poor people can't say anything. They haven't got money to talk with. They haven't

anything to say. They are like slaves." When an adopted boy is old enough, his owner might buy him a wife and release him to make his own living. The informant in discussing this matter of adoption seemed to feel that she was dealing with a form of slavery but of slavery to which no particular onus other than poverty was attached.

Individuals who had been lazy or inefficient in gathering food during the spring and summer were forced to buy it in winter. If they were too poor to pay for it they were given food by others but they were looked down upon. "Anybody could do what he liked with them."

Wealth and Property

Among the Tolowa real property could belong to individuals. Rich men owned portions of the river bank where no one but themselves might fish, unless of course the owner rented the fishing right. The same type of ownership extended to deer hunting grounds. The tribe moved in the winter to the mountains to hunt deer and in the summer to the beach to gather sea foods. The beach was not marked off into privately owned strips but belonged to the tribe as a whole. When a whale was washed ashore it also was considered common property and was divided by the headman. He was entitled to reserve the best portions for himself, including the flippers which were considered a great delicacy.

Other forms of wealth were dentalia and obsidian blades. Dentalia were strung according to size and kept in elkhorn boxes. The shells were fragile and highly prized. Therefore they were handled slowly and with reverence. Men tattooed marks on their fore and upper arms by which to measure the length of their strings. The possession of a string the length of a man's arm was a sign of wealth.

Obsidian blades were black or red and varied in size from the length of a man's hand to that of his arm.

The social implications of wealth and its desirability were expressed by the informant in approximately the following words:

A rich man was born rich and was a headman in the village. He owned much shell money and many obsidian knives. He had special fishing spots and land for hunting deer. If a poor man wanted to be rich he had to do a lot of sad things. He would go to a lucky mountain and cry and wish hard to be rich. He would think of his father and mother and how poor they were. He just sat and cried and thought hard about beads and rich things like that. For ten nights he would keep watch over a small fire of fir limbs. It is lucky to find a little basin of water on the mountain at this time. At dawn he would come back to the village crying. It was awfully sad to hear him. Then he would go to the sweat-house where the men were still sleeping and build a

fire from fir limbs which he had brought down in a bundle from the mountain. After he was through sweating he would go to the river to swim. Sometimes people go crazy wishing so hard to be rich.

Shamanism

Shamans were generally women, although men might occasionally acquire the rank. The attitude of the informant toward male shamans was that "they are not much doctor, they know only a little bit." The following account was either a real or a hypothetical case related by the informant.

There was a young woman who must have been poor because she felt sorry for herself. One day she was eating dried fish eggs and a woman took them away from her because they were too good for such a poor person. The girl felt sorry for herself and kept thinking all the time about the fish eggs. "Some day I hope I have everything I want," she said. She used to cry all the time. When she went to sleep she dreamed she would be a doctor and medicine people and money would come to her.[1] She talked about it in her sleep and walked about. People began to notice her. They asked if she were going crazy. She said she couldn't help it. Old Man gave her everything she wanted in her dreams. She got worse and worse. Maybe she would grab fire and eat it in her sleep. She could step in fire and not get burned. Sometimes she would climb up through the smokehole when she danced in the sweat-house and men would have to hold her. Then the people would say, "Let's take care of her. She is going to be a doctor." For maybe one year she has to eat alone, she has to eat special things, she has her own plate and cup which no one else must touch, she must be clean and take care of herself, get up early in the morning and not have anything to do with men. If she didn't do these things she would be like common people. Then she is taken to a lucky mountain where she dances facing the east. While she is there one or two older women stay with her all the time and hold her up when she dances if she gets too weak. During this time she eats just a little food and may drink water only at certain times. The fire is made of fir limbs and nice smelling roots are burned in it. She has to dance over this fire. The men sit around and sing, usually about the lucky mountain.

Sometime during the period of initiation the woman danced for ten consecutive nights in the sweat-house and was then taken to the lucky mountain where she danced ten more nights. Should a candidate be incapable of sustaining the rigors of the dancing and fasting, her powers are never considered complete although she may be able to achieve certain types of cures. Thereafter she doctors to the best of her spirit's abilities and should she effect a cure she is generously paid.

[1] The close connection between shamanism and wealth for women, and vigils and wealth for men is here evident. The possibility for adjustment to the social emphasis on wealth open to both sexes is of interest.

The curing procedure used by a shaman who has not entirely mastered supernatural powers is the following: She places water in a basket and in the water a fragrant medical root. Then she says, "good words, that the person is going to get well, be on clean ground, that her spirit has told her to doctor in this way." Everything which she speaks is "holy and goes all over the sick man's body to make him well." She then sucks the medical root, blows on the person and assures him that he is well. The curative element in this form of doctoring is the words spoken by the shaman.

The method of treatment used by a powerful shaman and the one considered the more effective was described by the informant in this general manner.

When a doctor is called to treat a sick person, she is offered a certain sum of money. Maybe the doctor won't think it enough, so she will ask for more or even refuse to doctor at all. A pain is something sticking in a person so the doctor must suck it out. She says words which come to her in her dreams. She dances facing east. She closes her eyes and says she can see things. Then she turns to the sick person and says he wished evil to someone and now his badness is lodged in him. If the sick man confesses having had such thoughts maybe she can help him. The sick person tells what he has been thinking. Then the doctor says she will take out the pain. She spits on the sore spot and begins to suck. Finally she sucks it out and shows a small black thing in her hand all mixed up with her saliva. Sometimes it looks like a small turtle or a small snake. It has two eyes. Then she stands up and dances and sings. She blows on her hands maybe six times and blows the pain away. Her hands are empty but no one has seen the pain go. The doctor closes her eyes and says she can see which way the pain went. Sometimes it goes back into dangerous ground (i.e., quicksand).

If a shaman loses a patient she may be required to return the fee. If the family feels that her efforts were sincere they will ask for only half of the fee to be returned. Good doctors were always persons of wealth and therefore of importance in the community.

Poisoning

Poisons were made of frogs and lizards. They were dried, powdered, and put in food. The victim's stomach would swell and the person die. The spittle of a dying person was considered particularly poisonous and deadly. It might be kept in a small basket until the poisoner wished to use it. Also poisoners had "something, maybe it looks like a little newborn bird." They talked to this charm all day, maligning the victim who would then die from the evil spoken against him. Sometimes a poisoner walked around his victim's house at night pointing his charm at the house. He might make small sounds resembling those of a mouse, bird, or dog. The people in the house

might hear the noise but they would be afraid to go out. The fear of poisoners is very great. No one would betray a suspected person for fear of being poisoned himself. Not only were poisoners within the tribe regarded with horror but the people living at Rɔqua (Yurok territory) were generally held in distrust in this respect.

A case of poisoning by a thwarted lover was reported. The girl had rejected a suitor and married another man. The rejected suitor then secured a hair from the girl's head, placed it in the mouth of the snake and told it to kill the girl. The snake went to bad ground (i.e. quicksand). The girl began having severe headaches. A shaman was called in and he revealed that someone was working against her. Thereupon the rejected suitor was summoned to her presence by her family. He confessed to what he had done and said that he hoped she would recover. This was all that was necessary to undo the charm and thereafter the girl was well.

Prayer

Prayers were formulae which had to be known word-perfectly. They were resorted to in times of danger, when a storm arose at sea, when one was lost in the mountains, or at any time when one feared for one's life. At such times the formulae were petitions to the spirits inhabiting either the ocean or mountains. In the words of the informant:

> most of the men seem to know these prayers. When a storm comes up some one says, "Don't any of you men know a prayer?" Then someone who knows it, says it. That's how you learn them. It is the same in the mountains. When you get lost there all sorts of things follow you; there are mean things in the mountains. Ocean and mountains are the same. It is best to be on land.

In this connection the use of the term Old Man in petitions quoted throughout this paper may be noted. The informant compared him to the white man's God. The Tolowa would seem to share with many other Californians a belief in a supreme being.

Ceremonies and Dances

The informant felt that many ceremonies and dances were definitely comparable to what is considered religion in the Euro-American culture. "When they have the feather dance, or dances for girls and doctors, it seems as though they are the times when they talk like religion."

First salmon ceremony.—The salmon run in Smith river during the late summer. A certain old man is sent to catch the first fish. After being caught it is cooked and the village assembles in the early morning to eat it. Then a particular man repeats a formula for the salmon to the effect: "May we

all be here every year to eat fish." The person who pronounces the formula was described as "a man who knew about these things" and was compared to "preachers" among the whites. After the pronouncement everyone partakes of a small morsel of the fish. No dancing is connected with the ceremony. All of last year's fish must be thrown in the river. The dried fish of last season must not be eaten after the new run begins. After the ceremony all are free to fish, even the women.

Feather dance.—It was performed during the winter in the dance house. It lasted five nights. The costumes consisted of the best buckskin clothing and ornaments which the dancers owned. Boys and girls performed while the older people, who were singers, stood in the northern and southern corners of the house. A pitch wood fire was used to furnish both light and heat. The young people danced in a line. From it one or two girls might step forward and dance back and forth on the tips of their toes. Three or four boys then stepped out of line also and a mock pursuit ensued in which the boys brandished knives and seemed to threaten the girl or girls. If two girls performed at a time they moved back and forth in front of the line in opposite directions. Another special feature often used in this performance was danced by a man wearing a deerhead decoy. He imitated the behavior of a deer who feared danger by running a few steps, stopping to listen, and running again. After a special feature of this sort the audience expressed its approbation by wishing the dancers riches and good fortune. "We wish that you may have another dress like the one you wear. We wish that when you marry you will be bought with two rows of dentalia." "We wish that you may get another knife like the one you have. We wish that you may have some day more beads like the ones you now have. We wish that you may go up in the mountains some day and get a fine woodpecker. We wish that a big seal might come ashore for us to eat." To such expressions of good will, the dancers replied with, "Yes, we wish that we might have more."

The dancing continues until morning. As day breaks, everyone goes to bathe. The women then return to the houses to prepare food. It was customary for one village to invite another to the Feather dance and for the guests to be fed at various houses. The men slept in the sweat-house and the women at the hosts' homes. The informant dubiously suggested that there might have been a special house for the guests to occupy.

The informant knew of the Requa (Yurok) Brush dance.[2] She said that it was performed for sick children, that it lasted two nights, and that men of all ages and unmarried women beyond puberty participated in it.

[2] For description, see A. L. Kroeber, Handbook of the Indians of California, BAE-B 73: 61–62, 1925.

The song types known to the informant were shamans', feather dance, and love songs.

Hand Game

The hand game described by the informant is that played with a bundle of slender rods, and one marked stick usually called the ace. From her description it seemed typical of the game as it is known in northwest California. There were, however, certain associated traits and beliefs which are of interest. Each side has a white deerskin mat spread out before it and after a guess has been made the bundle of sticks is allowed to drop, a few at a time, upon the deerskin to reveal whether or not the ace is in the hand chosen. The game is played to the accompaniment of a deerskin-covered drum and to singing by the side holding the sticks. Games continued all night and were often played from two to four nights in succession. It was played indoors and a fire built on white sand furnished light and heat.

The participants were usually boys who had not known women because they were considered particularly lucky. The leader of each team however was a rich man of the village who directed the game and placed the largest stakes. Fifty to one hundred dollars might be lost by an individual in a night's play. The boys who actually manipulate the rods purified themselves before participating in the game by a vigil without sleep or water for five consecutive nights. They also have certain food taboos to observe, possibly on deer meat. Cold water must not be drunk, for that "cools one off" and "kills everything." A woman who has recently born a child must not be eaten with for she is considered unclean. During the actual gambling no woman is permitted to enter the house, although she may look in from outside.

Miscellaneous Beliefs

As is usual in California there was a belief in a first people who were animal characters. The earth burned up and they went. When white men first came they inspired the belief that the first people were coming back. They thought that they would return over the water. Therefore they said, "Let's not look at it (the water). It is bad luck." The informant also said that the Tolowa at this time believed that the Indian dead would return. She was possibly confusing the beliefs concerning the first appearance of the whites with beliefs of the later Messianic cults, reverberations of which may have reached them. The first flour introduced by the whites was believed to have been made of ground human bones and was believed to be poisonous.

TALES

The telling of myths had no religious or ceremonial significance. There were no tales belonging exclusively to women or told exclusively to and by them.

Tidal Wave

This happened in Oregon. There were no white people on earth when it happened. Chetko is where it happened. It is called Brookings now. Chetko or Chet is the Indian name. It is a very pretty place on the bank of the river. There are nice even fields along the river all the way down to the ocean. The rich lived near the water. The houses were so thick there were only little trails between them.

One evening everyone was playing, all the little boys and girls, all the young women and young men. A widow woman mustn't "cut up" or laugh. A widow woman with her hai. cut short like a man came and joined the young people in their play. She began "cutting up" and laughing as loudly as she could. It was getting late that evening.

There was an old woman who was blind, she was so old. She had brought up her grandchildren, one boy and one girl. The boy was just old enough to fish for smelts. She always had things ready for them when they came in. She had a hard time bringing them up because she was so old and blind. She said, "I brought you up nicely. I had a hard time doing it."

The widow began to laugh as loudly as she could. The two children said to one another, "Grandmother said when a widow acts so, something would happen." The dogs jumped around. They were glad. Dog sat up and said, "Yes, you folks are going to see tonight what will happen to you, tonight." The two children ran in the house and told their grandmother, "Dog spoke," and they told her what dog said. The grandmother told the children to go right away, to go as fast as they could and not to wait for anybody. She would stay. She was too old and was ready to die anyway. She told the boy to take his fish net and his money . So the boy took the fish net and the money and the two children ran as fast as they could, upstream, away from the harbor toward Mount Emilie as their grandmother had told them.

Halfway there they looked back. They could hear the people cry. They could hear the cries rise and sink out. They could see the water come. When they reached the top of the mountain all the things in the woods which have names were there, deer, rattlesnake, panther, everything. The boy made a fire and they all sat around it. All night they sat around the fire on top of the mountain. When the sun came up it (water) had all gone away. The brother and sister stood up. Everything was gone. They went back to where their house had been. There wasn't anything there, no dead people. Everything was swept away clean. The ocean was nice and smooth. Everything was pretty. There was no wood to build a fire. The boy went down to the beach to fish. He saw far away someone slowly coming toward him. It was a girl. He went to meet her. They got married and people started again.

Pigeon

Before people were on earth, before the Indian was here, pigeons were a people, so were the cranes and the otters. They said, "Let's play cards." They all came together in a village, all came from different nations. The people were thick in the house so that there was no place to sit down. Young man (Pigeon) was playing cards. Everyone stood around with feathers and beads on. The drum was playing and people were singing. Pigeon was raised by his grandmother. He was raised very nice. On his side people were singing. They were singing so loud you could hear them far away. Some one came in very slowly, went to the fire and said, "Do you know what happened?" Pigeon didn't pay any attention to him. "Your grandmother died," he said. Pigeon said, "Never mind if my grandmother died. Go on." he said. "I shall remember her in the spring," he said. "I shall cry for her every spring," he said. He just kept on playing cards. He never went to see his grandmother. So that is why Pigeon still cries like this every spring. (Informant thereupon imitated the cooing of the mourning-dove.)

UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

A UINTAH UTE BEAR DANCE, MARCH, 1931

By JULIAN H. STEWARD

Introduction

TWO annual dances are still performed by the Uintah Ute: the summer Sun Dance, derived from the Plains area, to which they are marginal; and the spring Bear Dance, which is peculiar to the Great Basin tribes and a few peripheral groups.[1] Although the Bear Dance has been described at various times, unfortunately no complete analysis of it was undertaken before its forms and functions were modified by Caucasian influence. Lowie, who did not have an opportunity to witness the Uintah Ute dance, has compiled a fairly complete description of it drawn from older published records and Indian informants.[2] Reagan has briefly described the more ostensible features of the Ouray Ute (Uncompahgre) dance of 1929.[3] Spier's study[4] provides a good comparative and distributional survey.

The Bear Dance no longer retains many of its older elements, for deculturation and restrictions imposed upon the dance by the Indian administration have altered both its purpose and nature. It remains, however, a matter of vital interest to every Ute and provides for the ethnologist materials for a study of culture change.

The writer was granted leave of absence from the University of Utah during the early spring of 1931 to observe the full week's program of the Bear Dance performed by the Uintah Ute at Whiterocks, Utah, between March 22 and March 30. The greater part of the dance was personally observed and where it seemed to have departed from its earlier pattern, an effort was made to secure descriptions of the latter from informants.

Purpose and Meaning

The Bear Dance was in the past a spring festival that preceded the breaking of winter camps and migrations in search of food and game. Before the advent of the white man, small bands of Ute, probably numbering fifty to one hundred, took up winter quarters in skin or brush tipis in the coniferous forests of the foothills along the southern slope of the Uintah mountains. Early in spring, probably about February, came the dance as a signal to break camp and move about in the pursuit of game. Each small village was apparently a law unto itself for this official introduction of the new

[1] Leslie Spier, Havasupai Ethnography, AMNH-AP 29: 267–274, 1928.

[2] Robert H. Lowie, Dances and Societies of the Plains Shoshoni, AMNH-AP 11: 823–831.

[3] Albert B. Reagan, The Bear Dance of the Ouray Utes, The Wisconsin Archaeologist, n.s., vol. 9: 148–150, 1930.

[4] Spier, *op. cit.*

season seems to have been held by each without reference to the others. News of an approaching Bear Dance was, however, carried to other groups so that visitors might come to participate. Extremely small villages contented themselves with their neighbors' ceremony instead of attempting it at home. An occasion of organized sociability unattainable at other times of the year was thus provided for intervillage visits.

The Bear Dance is still dated by a seasonal change in activity, but spring now means the beginning of agrarian pursuits instead of migrations for food. This, however, merely permits the dance to come later, in March, just prior to breaking the soil and after warm weather has set in. Owing to concentration of the Ute population upon reservations, the dance is held at only the following three localities in the Uintah basin: Whiterocks, by the native Uintah Ute and White River Ute from western Colorado; Ouray reservation on the Green river by the Uncompahgre Ute from near Montrose, Colorado; and Myton, as a commercial enterprise, mainly by non-reservation Uintah Ute. The early tendency for scattered bands to organize temporarily into an approach at communal activity has reached the extreme, through reservation concentration at Whiterocks and Ouray. Not only do the reservation residents attend, but many families travel a score or more miles. The attendance of those living at a distance is not a function of modern transportation, for few Ute can afford even the luxury of a worn-out Ford. During the early stages of the dance the roads for miles are dotted with horsemen or wagons heaped with hay, baggage, and people.

The Indians now desire two successive dances: one at Whiterocks followed by one at Ouray, or vice-versa, so that the residents in one locality may participate in the other's dance. Reservation policy frowns upon this, however, for it takes two weeks instead of one from useful activity and may, moreover, lead to quarrels among visitors. Consequently, the two dances were simultaneous this year. At the town of Myton, however, which is in the center of white population, the usual commercial dance was staged by non-reservation Indians at the completion of the other performances.

The management of the dance is today as in aboriginal times in the charge of one man, chosen specially for the occasion. Until his recent death, Kwainats was both tribal and dance chief. He was succeeded, however, by John Duncan as tribal chief, while Billy Chapoose (Chüpüs) became, for this year at least, dance chief. The Bear Dance chief is definitely chosen by the men of the tribe, whereas the tribal chief attains his position through age and prestige rather than through election.

The purpose of the dance and the attitude of the participants toward it have probably altered more than its external, formal features. For at one

time it had definite supernatural reference to the bear and even included other minor religious elements, whereas today it is almost purely a social affair.

Accounts secured regarding its former significance are substantially in agreement with those already published.[5] Supernaturally, it was to conciliate the bear, for by doing "his dance" his friendship and kindliness toward human beings were secured. There seems to be little question in the minds of even the younger generation that the bear dances in the mountains as the people do in the Bear Dance. The following origin account, in which the Plains formula of vision-given ritual is suggested, was secured from John Duncan:

> Long ago a man dreamed he saw a bear way back in the mountains dancing in front of his house. He danced to a pole and back again and kept repeating this, as the people dance forward and backward now. The man then set out to seek the bear. After traveling in the mountains, he found him dancing in this manner. The bear taught his dance to the man, who returned home and introduced it to his people.

Thus a feeling of rapport with the bear is supposed to be established in order that hunters and people traveling in the mountains will not be molested by him. Paradoxically, this does not call for any taboo on bear hunting. It is a matter of doubt whether this connection with the bear originated with the dance, for these people lack bear shamanism. Moreover, the name of the dance, mama′qündküp, refers not at all to the bear but to the "backward and forward steps of the dance."

In addition to propitiating the bear, the dance also provided an opportunity, according to Jeddie Long Hair, for a few prayers, probably to Sü′nāv[i] (Wolf) and some doctoring.

The changes in the Indian's attitude toward the Bear Dance involve emphasis rather than innovations, for the ceremonial aspect is practically gone, whereas the social appeal is increasing. The most feared species, the grizzly, has disappeared and the brown or black bear is virtually extinct, tribal religion is on the wane, and the medicine-man is losing prestige. Since the religious motivation is lacking and even the climax of the whole affiair, the appearance or "coming out" of the bear on the last day of the dance is regarded as unessential, the dance is now considered an occasion for "good times," relations between the sexes being of paramount interest.

The duration of the dance this year was originally set for one week, Sunday to Sunday, but inclement weather delayed it so that an extra day was added at the end. As John Duncan could not recall its ever having a

[5] Lowie, *op. cit.*

fixed duration, stating that about one week was usual, it is evident that no ceremonial number of days is involved.

Paraphernalia

The dance enclosures and paraphernalia observed were the same at Ouray and Whiterocks. The circular corral was approximately one hundred and ten feet in diameter at Ouray and one hundred feet at Whiterocks. At each locality the enclosing fence was between six and seven feet high, constructed of pairs of poles, a few inches apart, set at intervals of several feet between which were laid brush and boughs to the desired height. (See pl. 6*a*.) At Ouray, limbs of cottonwood, which is very abundant, were used; at Whiterocks, birch and service berry were employed. John Duncan declared that formerly they merely piled boughs on the ground and the elaborate fence of today is to protect the children from horses. This seems questionable, however. The opening in the corral, which was approximately five feet wide, was due east at Ouray but at Whiterocks was directly south. Although an informant at Whiterocks stated that the tipi door was oriented east, he did not seem to comprehend that the dance corral should be similar. One person stated that the opening was south because the prevailing wind was east—a poor rationalization.

A new corral is constructed each year at Whiterocks. Just north of the present dance grounds were observed the charred remains of last year's enclosure, while to the northwest were the remains of one of an earlier year. The reason for burning the old corral and choosing a new site each year was not ascertained.

At both Ouray and Whiterocks the orchestra was stationed against the fence, directly opposite the door. (See pls. 5 and 6*a*.) A wooden frame about one foot high, and two and a half feet wide by six feet long, had been covered with a sheet of tin. Around this, on improvised benches, sat the musicians, holding in their left hands notched wooden sticks, one end of which they pressed against the tin resonator. At Whiterocks, these rasps were manufactured from any suitable pieces of wood by sawing ten to fifteen shallow notches on one side. At Ouray they were better made, generally being concave on the rasp side, and one, at least, had a crude bird's head carved on the end. The notched sticks were rubbed with short, thick, cylindrical tarsal or carpal bones, probably of cattle, held in the right hands. A steady rubbing on the rasps, amplified by the tin, provided a powerful and not unpleasing rhythm, which was the only accompaniment to the singing.

The songs, in conformity with the Plains musical pattern, began on high notes, descending until they were not audible above the booming rasps.

a

b

Pl. 5*a*, The musicians seated around the resonator. Several notched sticks are on the ground under the bench in *b*.

a

b

Pl. 6*a*, A dance assistant makes a speech during an intermission, requesting the people to participate. *b*, The row of men dance with their backs to the orchestra.

Three separate timings of the rhythm at Whiterocks gave 124, 135, and 128 beats per minute. The musicians sang in perfect unison, having rehearsed Saturday nights for many weeks preceding the dance. It was said that new songs had been made up and that the old ones would be used only when these had run out. A single song, however, appeared to be used the greater part of the dance, a second being introduced only occasionally.

At Whiterocks, a flag portraying an Indian, clad in war bonnet and decorated buckskin clothes, saluting a large grizzly, was erected on a twenty-foot pole behind the orchestra the sixth day of the dance. (See fig. 1.) This was said to represent the Indian who first learned the dance from the bear

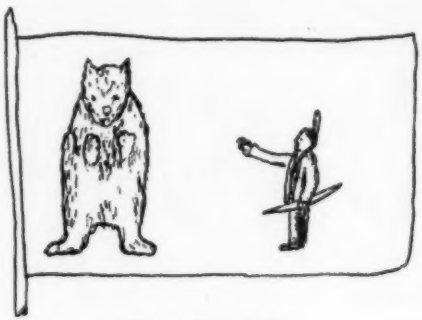

FIG. 1. The bear flag.

THE PERFORMANCE

Sunday, March 22, 1st day.—I went first to Ouray and arrived at the dance ground about 3 p.m. The day had commenced with a violent windstorm and now a hurricane filled the air with dust that was almost unbearable. Consequently, although nine or ten musicians had already begun to play, only a few small children between the ages of six and nine were present. They danced arm in arm, in imitation of their elders, but the latter remained at home, waiting for the storm to abate. As it continued to roar at five o'clock, I left for Whiterocks, to learn that the severity of the weather had entirely prevented festivities there.

Monday, March 23, 2nd day.—A few visiting Indians had arrived at Whiterocks, and I was informed that a menstrual lodge had been erected in the vicinity of the dance corral for the use of visiting women, as the monthly taboo is still strictly observed.

As the day had dawned clear and warm, I found upon arriving at the dance grounds at 2:25 p.m. that the boarding-school had been dismissed

and the children marched to the corral, which was now held by several score young children, aged six to twelve. While a dozen or more small boys performed on the notched sticks, little girls and boys danced. In a short time, half a dozen men replaced some of the boys at the resonator and the children took up the dance in earnest. A few adults were present but the greater part of the afternoon was devoted to the children, who performed in the same manner and spirit as the adults. The prominence of the children on this and ensuing days testifies to the essentially social nature of the occasion. John Duncan declared that formerly children were not permitted to participate.

FIG. 2. The dance steps. From the standing position, X-X, in *a*, the dancer advances two steps and returns three. He then advances with the other foot, in *b*, and returns. *a*, *b*, and *c* show three advances and returns, 5 steps being involved in each movement.

The dance proceeded in the conventional manner. The small boys and a few men stationed themselves on the northern side of the corral along the fence on either side of the orchestra, while the women and girls occupied the opposite side. The musicians began a song accompanied by a rapid, irregular rubbing of the notched sticks until the song had been carried through once, when the rhythmic four-four time commenced. At the beginning of the song, the girls marched across the corral, each choosing a male partner whom she designated by a mere wave of the hand, and then lined up east and west with locked arms, facing the musicians. The music now ceased for a moment and when it resumed with rapid rubbing on the sticks the boys sauntered out to form a line, hands clasped, facing their partners. When the music struck a steady rhythm again, the lines swayed forward and backward, two long steps to the front, three short ones back, one line advancing as the other retreated. As five steps complete a dance movement, each advance is with the alternate foot. (See fig. 2.) According to Louis

Abris, this is the way the male and female bears dance in the spring when they come out to mate.

As the dancing warmed up, couples broke from the line and ran backward and forward ten or fifteen steps, the boy on the girl's right, each encircling the other's waist with the right arm. Meanwhile, several young boys armed themselves with long switches to lash the sluggards. This feature, however, is being discontinued, for toward the end of the week, when the adults took a more active part, it was not observed.

It is not customary, as in some tribes, that at the close of each dance the man shall pay his partner. Only white men are expected to pay at Whiterocks. I found the following rates satisfactory: five cents or a bag of candy for children, ten cents for young women, twenty-five cents for old squaws. Fortunately even payment could not induce the last to dance very frequently!

It was formerly the rule, according to Jeddie Long Hair, that when a dancer fell, one of the musicians should rub his elbows, knees, back and heels with a notched stick to ward off disease or misfortune. I was told that this had been discontinued but did not have an opportunity to verify it because no one fell.

Until 3:30 p.m. the festival was dominated by the young children, at which time one of the assistants of the dance chief arose and in a loud speech, which lasted several minutes, exhorted the people to participate. (See pl. 6*a*.) He was largely ignored, however, and a hand-game which had begun outside the corral between two old Ute men continued for the remainder of the afternoon serving as the center of attraction for a dozen men.

At 4:50 p.m., when the whistle sounded to call the youngsters to march home, only a few adolescents who had recently joined the dance remained, although more speeches had been made by the dance assistant.

At 5:30 I left the dance corral with the feeling that the affair had not been taken at all seriously, although it still dragged on. Children and infants had romped in the corral, dogs had been everywhere in evidence, and anything but dignity had been maintained. When I returned at 6:30, the place was cold and empty and those few who had stayed to the end were straggling home.

Tuesday, March 24, 3d day.—At 2:30 the orchestra began to play lazily, and as on the previous day, the school children who had been marched to the corral by their teachers held the stage.

In the middle of the afternoon, during a pause between dances, an old, white-haired woman began to cry bitterly in broken, sobbing wails. It was

soon apparent that she wept in a definite melody, starting in a high pitched moan and descending through minor intervals to a low sob. She repeated her tune many times, but no one heeded her. Groups of people continued to make jokes and laugh, children romped with dogs, and soon the musicians broke in to end her overt grief. I was unable to confirm the report that the spirits of the dead are supposed to return during the Bear Dance. In fact this was explicitly denied and everyone who was questioned answered independently that "probably she had a dead relative who used to do the dance and seeing the people do it now reminded her."

A somewhat larger crowd had gathered by this time but a general indifference was still manifest. The old men stood outside looking through the fence or played the hand-game. The young men loafed or sat on their horses looking over the fence. Only the women seemed desirous of dancing, and, clad in bright shawls, they sat on the southern side of the corral looking for partners. But partners were not available, the harangues of the dance assistant remaining futile. Consequently the women chose partners from the orchestra, which was in continual danger of depletion. When the school children left at about 4:30 p.m., only four or five couples remained, and by 6:30 activities terminated for the day.

Wednesday, March 25, 4th day.—I was not in attendance this day but was informed that the program of the previous day had been followed and that the dance had gained some momentum, for the adults took a slightly more active part.

Thursday, March 26, 5th day.—Last night a blizzard brought intense cold, which continued through the day with temperatures well below freezing. In midafternoon, however, people began to drift toward the dance ground apparently more or less impervious to the cold, but the school children were not permitted to attend. Several fires were built outside the corral and three inside, around which the people huddled. At 4:15 a few musicians began to perform and shortly a very stout squaw chose for her partner, Orens, the tall, mysterious shaman whose deformed mouth is always covered by a bright handkerchief. The two performed a brisk, prancing solo, jostling and bumping each other. Eventually four or five couples aroused themselves, but the temperature dropped rapidly and soon the music ceased.

Friday, March 27, 6th day.—Although the temperature reached zero last night, it warmed sufficiently by afternoon to permit a fair crowd to turn out. Children were again mostly in evidence, but many adults also took part. Visiting Indians from distant places continued to arrive. An admission fee of twenty-five cents was instituted for white people. As the

afternoon passed, speeches were made to encourage dancers, and about 4 p.m. the Bear flag was raised behind the orchestra. When the school children returned to their dormitories, fifteen or twenty couples remained, dancing until nearly sun-down.

The original plan to conclude the dance on Sunday was abandoned and Monday set for the final day, partly because of the delay caused by weather, partly because they preferred to postpone their feast until after Sunday when the white people had left.

Saturday, March 28, 7th day.—As if the entire week had been preparatory to the last few days, a serious interest now was taken in the dance. People made it a point to be present; women dressed in their best clothes and young men condescended to abandon their points of vantage on horseback looking over the fence and sat in the corral so they could be chosen for partners. Children were again present in large numbers but were less conspicuous in comparison with the adults, and their dancing was more confined to the side lines. The dance proceeded as before, however, and the big day was yet to come. Various men made speeches requesting everyone, including the white people, to join and to be sure to come on the morrow for the big day. Many wagonloads of visitors arrived for the culminating day and made their camps.

I volunteered a contribution to the final feast. Billy Chapoose, after consulting a moment with the musicians, requested a case of canned tomatoes and a large box of soda crackers!

Sunday, March 29, 8th day.—This was the real climax of the Bear Dance. All morning people continued to arrive and by afternoon a large crowd was present. Many white people, too, had come and a fair toll of admission fees had been taken.

The Indians had dressed for the dance in their gaudiest finery so that the female side of the corral flamed with color. The ideal costume for women was: a gayly colored gingham dress, a brilliant shawl (many of these were of silk), hair tied loosely at the neck and hanging down the back, beaded belts and beaded moccasins with high tops, and all the jewelry, preferably Navaho, available. A few women wore long Spanish dresses, spangled with elk teeth. The well dressed man wore an exceedingly tall cowboy hat, with beaded band, colored shirt, dark pants (frequently new overall pants), and—most cherished of all—large, beautifully-beaded gauntlets of buckskin. Earrings of all kinds were used and the older men braided their hair into two bunches which hung over each shoulder, while their heads were covered with colored bandannas which concealed their ears. Hats were worn over these. The young men preferred brilliant bandannas around their necks.

The dance started about 2 p.m., and no one was bashful. Men, both young and old, made themselves available, and the women greedily sought their partners. White men who ventured into the region of eligibles were also chosen, but had to pay the customary small fee at the close of each dance. It might be added that this payment clearly motivated their being chosen.

Activities proceeded with vigor and thirty to forty couples participated in each dance. At first they performed with dignity, the women stepping lightly and the men prancing proud and erect. Soon, however, the lines commenced to bump each other and once the men were pushed back until a number tumbled over the orchestra onto the resonator. Couples split off, dancing back and forth across the corral. No whips were used, however, for this practice has been abandoned. Frequently a popular young man was chosen by two women, who, when the lines split up were seen dancing on each side of him. (See pl. 7.)

A little after 5 o'clock I was forced to leave the dance to return to Salt Lake City, but things were then at their height.

The plan for the remainder of the dance was to stop about sun-down and continue the following morning until noon when the feast was to be held. Formerly, the dance would have continued all night until dawn when, at sunrise, the bear "comes out," a man and woman impersonating bears. In this feature, a female bear appears pursuing her partner in keeping with the female aggressiveness of the entire ceremony, and the two dance for some time—according to one informant, for an hour.[6] The Ute at Myton are said to have bear skins which are worn by the impersonators. After the bear has come out, the people resume their dance until someone falls when the ceremony is officially closed and the feast ensues. The all-night performance has been discontinued, however, by government regulation, for the importation of liquor cannot be controlled after darkness falls. The ceremony of the bear coming out has also been discontinued.

Psychological Attitudes

Although the Indian now regards the Bear Dance as an opportunity for pleasurable social behavior rather than religious devotion, it nevertheless represents a set of behavior habits foreign to those of the white man's culture. For the relations between the sexes are precisely the reverse of those usually regarded by the Caucasian as proper, normal, and frequently even as inevitable. There is no question that it is the women who are here the

[6] This is still observed at Ouray according to Reagan's account (*op. cit.*).

a

b

Pl. 7*a*, The women advance as the men retreat. *b*, The two lines from the west.

a

b

c

Pl. 8*a*, Part of the line has split up into couples. The man with the white hat has two girls. The bear flag waves above the musicians in the background. *b*, *c*, Some of the Indians dance in couples.

aggressors; in fact they are even less shy than the males in Caucasian society. Where, then, is the inevitableness of male aggression because of superior masculine strength, dominating character, or quicker physiological sex responses? A pattern has been created in which the male is retiring and diffident, sitting patiently to be chosen and always, according to the custom, accepting his invitation coyly, without murmur.

It is said that these are largely mating dances. Jeddie Long Hair admitted that he and his wife courted during a Bear Dance. And yet courting seems to center in the dance corral, for I did not observe any extra-festivity philandering. At the close of each day, all the people went home or to their camps. I could not verify the popular belief among white people that women who are in search of husbands wear white blankets or sheets instead of shawls. This seems a priori improbable inasmuch as it is they who do the looking or at least make the advances. And with the exception of an aged grandmother, no woman wore white of any kind.

A fertile line of inquiry would be how far the attitudes exhibited in this dance extend into everyday life. If the women make the advances in mate choosing on an occasion when, in a stereotyped manner, they are expected to do so, does it carry over into other phases of the Ute culture? From various sources, I learned that a single standard of morality exists,—the white people would not admit that there was any standard! One is led to wonder, then, whether the social behavior of the sexes is not as much culturally determined as, say dress, and whether the generally observed reactions said to be typical of the sexes do not follow from some other cultural fact, for example, economic division of labor, which may be more basic.

UNIVERSITY OF UTAH
SALT LAKE CITY

A DISCUSSION OF CULTURE CHANGE AS ILLUSTRATED BY MATERIAL FROM A TETON-DAKOTA COMMUNITY

By SCUDDER MEKEEL

WHEN culture comes to be studied more intimately in terms of processes, the need will be increasingly felt for gathering more complete data on the subjective aspects of culture products within definite ethnographic areas. A study of change as a process of culture, for instance, inevitably leads to a consideration of the transformations in concepts, attitudes, values —in short, the complete psychological *aurae*—surrounding those culture traits which are in flux. For people react not to object-in-itself reality, but to its symbolic derivatives. Therefore only by an investigation of meanings current within a group can one approach an etiology of alterations in specific culture products; an etiology necessary for understanding the nature of culture change in whatever form—invention, diffusion, or modification. Two examples of culture process may illustrate the point. It is easy enough by saying "culture resistance," to explain the retention of cattle by the Yakut in the face of a new and unfavorable environment. Yet in so doing what deeper understanding of culture as a dynamic phenomenon is obtained thereby? Likewise, it is possible to call "diffusion" the fact that the Tupi Indians sleep in suspended hammocks, whereas the Caraya lay them out carefully on the ground. In fact, so far has the original purpose been lost that the Caraya often throw them about their shoulders for shawls. If this is a case of diffusion in the sense that they obtained their inspiration from a Tupi-type hammock, some misconception obviously occurred in the transference. The most that can be said is that some *value* was put on the new and sorry form of the hammock by those so using it. The riddle of the Yakut cattle and the Caraya hammock lies within the sphinx of the past; in the present one can advance, at most, only astute armchair hypotheses since the psychological milieu during the critical periods of impending change is irretrievable.

This should not discourage those primarily interested in how culture works. An investigation of process implies a from-when to-when relation. Present-to-future may nevertheless be snipped from the thread of time as easily as present-to-past. That is, a culture can be thoroughly studied from the viewpoint that any culture is something in the process of becoming something else.[1] This means probing for trends, significant personalities,

[1] The time element in significant changes is being greatly foreshortened for contemporary primitive cultures by the overwhelming influence of our Euro-American culture. Also, in a quite alien culture, the relevant data and significant aspects are more easily distinguished than in one of the Euro-American group.

salient environing influences (physical, cultural, social, physiological, psychological)—all possible culture reagents at work. Then developments should be watched during a period of years, after which that culture should again be thoroughly combed in order to understand what has taken place during the given time. The various influences, previously postulated, can be re-evaluated in the light of what has actually happened. By this method it may be possible to inject meaning into culture history as a reconstruction of significant events in the past.

It is quite likely that such an ambitious ferreting into the devious workings of culture may not yield a natural science by the very nature of the phenomena concerned. However, the quest is worthy, if only to polish up old facts to sit beside new ones, in the hope that there may develop a deeper understanding of culture forces—and, possibly, of human nature as well. Certainly there is in the person of the American Indian a fund of varied, concrete material with which to work out culture processes— a fund valuable to draw upon while significant changes are still occurring.

A concrete situation will illustrate the kinds of problem involved in a study of culture from this viewpoint. Let us take up in some detail the political organization of the present-day nomadic camps of a certain Oglala Teton-Dakota community observed by the writer during the summer of 1930. This group of about nine hundred and fifty people, most of them descendants of the hostiles under Red Cloud, occupies the White Clay district of Pine Ridge reservation, a district which has earned for itself the epithets "full blood" and "backward." To white people this last is evidenced in the amount of summer traveling, especially in groups, the organization of which shall be described later.[2]

To begin with, it is well to review what is known of the early political set-up of the Oglala. For this purpose the following has been taken from Dr. Wissler's monograph:[3]

> . . . The Oglala were formerly, it is said, composed of four divisions (Oglala, Kiaksai, Oyukhpe and Wazazies). When reservations were established, two of these divisions were placed under the Pine Ridge Agency. . . .
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> The two former Pine Ridge divisions are now known as the Red-Cloud camp (Oglala) and the Kiaksai. As far as our information goes, it appears that the former had by far the more complex organization and in the main prevailed when the reser-

[2] It is true that there are some in the community who do try to stay home at least most of the summer and act "like white people." Of course a study of the total phenomenon of summer nomadism should include this group and those families who make a habit of visiting distant relatives.

[3] Societies and Ceremonial Associations in the Oglala Division of the Teton-Dakota, AMNH-AP 11: 7–11, 1912.

vation was established. It was in this camp that the *chiefs society* originated. (*Op. cit.*, 7.)

The following condenses Dr. Wissler's references to the various functionaries in the Red-Cloud camp, our primary interest:

Chiefs society.—The majority of the efficient older men of forty years or more; elected its own members.

Seven chiefs.—Elected for life by the chiefs society. These seven chiefs did not actually participate in the daily government but delegated powers to younger or more virile men, by the appointment of four councilors, the "shirt-wearers," who serve for life.

Four shirt-wearers.—Appointed by the chiefs to serve as the supreme councilors and executives. They are charged with the general welfare. Thus, though theoretically deputies, these four men are the real power in the government.

Four officers (wakic'uⁿsa).—The seven chiefs, often assisted by the four shirt-wearers and the whole chiefs society, elect four officers (wakic'uⁿsa) to organize and control the camp. All except the four shirt-wearers are eligible to this office.

Four chief akicita.—Two head akicita are selected by the wakicunsa. These two select two others to serve with them.

Akicita force.—Eight to ten men appointed by the chief akicita, or an akicita society selected instead.

Now as to the duties and functions of the wakicunsa and akicita in particular:

Wakicunsa.

In former times, the tendency was for the people to scatter out in winter, *but early in the spring the camp circle was formed and its government organized. This was initiated by the selection of the wakicun.*[4]

The wakicun are after all the true executives, the shirt men standing as councilors. A tipi was set up in the center of the camp circle as the office of the wakicun in which they occupied "the seats of honor." The shirt men as well as the seven chiefs had seats there as councilors, but did not sit continuously like the wakicun. As soon as invested in office the wakicun appointed two young men to act as orderlies, see that fuel and food were provided, etc. They appointed a herald to promulgate their orders. They also selected two head akicita (akic'ita itac'aⁿ). We were told that the society of chiefs announced the election of a wakicun through the head akicita. (*Op. cit.*, 8.)

Returning to a consideration of the scheme of government, it is clear that all the civil and economic affairs of the camp are in the hands of the wakicun. On all these matters, they are free to instruct and can enforce their orders through the akicita. They decide when to break camp, where to go and again select the new site. Hunting must be carried on when and as they direct. They also see that every person

[4] My own italics.

receives a fair share of the meat and is provided with enough robes to make the winter endurable. They settle disputes, judge and compound crimes, and make rules to ensure proper decorum in camp. However, our informants all felt their chief function to have been the regulation of the hunt, or the conservation of the food supply. (*Op. cit.*, 11.)

There is some reason for believing that the office of chief was a modern innovation and that the original tribal government of the Oglala was vested in the wakicun. (*Op. cit.*, 11.)

Akicita.

The Indians define the word akicita as "those who see that there is general order in camp when travelling from one place to another; those who attend to the duties of overseeing the buffalo hunt so that no one may chase the buffalo singly; those who see that all can charge the buffalo at once or split up the party so that when one chases buffalo one way, the other band closes in; and those who supervise the chase to get better results. They also see that no one kills another, but in case one does, they either kill him or destroy all his property, kill his horses, destroy his tipi, etc." Thus, though in general literature the term akicita is rendered as "soldiers" its approximate equivalent seems to be police or marshals.

The akic'ita itac'aⁿ seem to serve continuously during the season. Although our informants are not quite consistent it seems that, as a rule, the four head akicita were chosen from the same society and while it was expected that they choose their assistants from the society, they were at liberty to recruit the force at large. Thus, we were told that if the leaders of a society were appointed as head akicita, their administration would be efficient by reason of their having in hand a highly organized corps of able-bodied men upon whom they could call for police service. (*Op. cit.*, 9–10.)

It is thus apparent that the wakicunsa and akicita were the most important functionaries during the summer months. Today this is also true of the nomadic camps.

Now a word can be said in regard to the existing political organization on the reservation, although not in detail, since it is complicated by the extent to which the United States Indian Service has assumed certain functions. The chiefs society, at least in the White Clay districts, is still in existence with about fourteen members including the chiefs of bands in the district. Each band, of which there are now thirty-odd on the whole reservation, has its chief. Formerly the United States selected one chief to recognize from each of the seven districts, but now no chief is recognized as such. Over each band, of which there are now more than thirty, there is also a chief, thus making thirty-odd from which to choose the seven recognized by the United States. The "shirt-wearers" are gone, as are the wakicunsa. The akicita no longer exist as a body, although in each

band a man or men may act in that capacity under the chief. It is possible that this is an old pattern for small units on those occasions, as in the winter, when the camp circle was not functioning. Lewis and Clark,[5] for instance, say that each chief had his soldier. Be that as it may, part of the police duty has now been absorbed by the government native Indian police stationed in various parts of the reservation. In addition to offices carried over from the past, recently a new body, the Council of Twenty-one, has been fostered by the Indian Service to dispense with councils of the whole assembled tribe. This body, comprising three members from each of the seven districts, is elected by the adult Indians on the reservation. One of the three council members from White Clay district, a young Indian, is the present chairman of the council. A distinct conflict of power is apparent between this Council and the older men who have heretofore controlled tribal affairs.[5a]

To these summaries of the old summer hunt organization and of the present officialdom of the Oglala must be added a few salient points on the development of their summer life. As were most other Plains tribes, these Indians have continued to be on the move. Even after the extermination of the buffalo and the removal of Red Cloud's group to a reservation, large parties still went on summer hunts for smaller game. Permissions were granted by the agent until settlement of the surrounding country caused frequent quarrels between the roving Indians and the cattlemen. Finally permissions for such hunting parties were refused. About this time there started, in towns neighboring the reservation, the custom of annual fairs and rodeos. As an attraction for spectators Indians were invited to camp near by during the celebration. There is now a definite pattern for attendance at these affairs.

A prominent "chief" is invited by the rodeo committee of a particular town to bring a group of Indians to the coming show. Usually he is the same year after year. Full and complete responsibility for the conduct of the party rests on his shoulders—even to liability for the behavior of any individual within his group. This is imposed both by the town and by the Indian agent granting permission. The chief passes word through the district about the invitation and proceeds to form an organization to manage the party.

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[5] Reuben Gold Thwaites, Original Journals of Lewis and Clark, 1: 164 (New York), 1905: Entry date Sept. 25, 1804—Direct white contacts with the Teton-Dakota were at this period still in a formative stage.

[5a] Was discontinued in 1931 by vote of a general council. Some form of the tribal council will probably take its place.

Each chief appoints a body of men called either the "akicita," "canksáyuhá," or "committee." Akicita, as it will be remembered, formerly designated those exercising the executive and police powers in the ancient organization. Canksáyuhá[6] is the term also applied to the government police on the reservation, and it sometimes happens that one of this force is appointed to head the body. The police idea is also brought out by the fact that quite often the head committeeman is deputized by the sheriff in the town during the rodeo. However, the English word "committee" appears to be superseding the other two. The body of men, designated by all three of these words, keeps order in the camp, distributes rations given by the rodeo committee, collects money for destitute members of the camp, superintends pasturage of all the Indian horses, and executes any suggestion given by another unit of men—the wakicunsa.

These latter are chosen from the headmen of the various bands represented in the camp. The virtual and final authority appears to rest with them, except where outsiders are concerned. In this case the chief stands out—for display in the eyes of tourists; for censure in the event of misconduct of one of his group while in the town. It is not clear whether the wakicunsa are appointed by the chief, although that is the supposition. It may be that the position of wakicunsa, apart from the other headmen, is retained as a sentiment.[7] This is hinted by the fact that any headmen of a band present usually take their places in the council tipi along with the camp officers who have been mentioned.

The chief likewise selects a camp crier who also has his place as an officer in the council tipi. This tent belongs to one of the wakicunsa and is volunteered, or drafted, for the council meetings. Each morning the wakicunsa order the herald to cry in a certain formalized way the names of certain children, four in number, selected by the council. This is considered an honor to these children—which the parents must repay by serving breakfast to those in the council tipi, that is, to the wakicunsa, committee, herald, and guests of honor, if any. Another four children[8] are selected for the next meal, and so on. The council tipi is at other times the living quarters for the family of the tent owner. Sometimes this tent has to be struck first as a signal given by the wakicunsa to break camp.

Those chiefs who adhere to older forms appoint still another group—the dunw'ɛyan or "scouts." Some delegate their function to the "committee,"

[6] Canksayuha ("has the club") is probably a coined word for our "policeman."

[7] In Short Bull's camp, however, all were called wakicunsa except one, a much younger man.

[8] A man's wife may be thus honored, especially if there are no children.

which thus serves a dual rôle. Other more practical chiefs omit them entirely. The duty of the scouts is to advance on horseback after the noon halt on the day of entrance into the town where the rodeo is to be held. They, with the chief and his interpreter, go forward to call at rodeo headquarters. Here they are told where to camp, where to get water, what rations will be allowed, and what horse races have been arranged for their benefit. They then return quickly to the camp, where the wakicunsa stand forth to greet them and learn the report of their mission. Singers with a drum sing special scout songs in their honor, just as if they had reported buffalo or an eneny war-party. The scouts must then give away either money or some of their belongings to the singers. Such songs had also been sung on their behalf as they left the camp, but nothing given away. Now the whole group gets under way in order to reach the town by evening.

One may now summarize the main elements in the organization, along with some concrete examples from the summer of 1930. The general patterns used by different chiefs are quite similar, yet individual variations exist which may be significant to a study of culture change:

General pattern	*Hot Springs, S. D.*	*Custer, S. D.*	*Edgemont, S. D.*
Chief	White Man Bear	Young Skunk	Short Bull
Wakicunsa	4 Wakicunsa	4 Wakicunsa	9 Wakicunsa
Committee	4 Committee, 4 Canksayuha (now combined)	4 Canksayuha	12 Akicita
Scouts	———	6 Scouts (2 of them girls)	12 Dunwɛyan
Crier	1 Crier	1 Crier	1 Crier
Singers[9]	Singers	4 Singers	Singers
Council Tipi	Council Tipi	Council Tipi	Council Tipi

Chief Short Bull has conducted parties to the Edgemont Fair for twenty-five years, and boasts of having had no trouble or casualties on any of his trips. His organization is largest in point of numbers— 9 wakicunsa and 12 akicita who are also dunw'ɛyan. In spite of this apparent deviation in traditional pattern he favors the old formalities in fulfilling the duties of office—as, for instance, the scouting ceremonies. White Man Bear, who happens to be the former chief of our White Clay district, takes a group

[9] This group is more or less indefinite. The singers obtain their financial remuneration by singing begging songs during the course of an evening's dance in the camp.

to the Water Carnival at Hot Springs. This affair is of only three years' standing. He has organized all three of the trips and has not used scouts, although his four wakicunsa, on horseback, did take the van when on the road. The camp stops for the noon meal before entering the town, as the others do, but the chief and his interpreter proceed along to town *in an automobile*, find out what is necessary, and then return to the encampment. He has also tried having a "committee" to distribute rations and a "canksayuha" to keep order. Evidently the scheme was not successful, because this year the same men performed both functions. This chief seems not to be afraid of experimenting with his organization.[10] Young Skunk is between these two chiefs in degree of conservatism. He has followed the general pattern, but is not particularly insistent on old formalities. He was fortunate in being able to get his four singers on the payroll of the Custer affair along with the camp officers.

The attitude of each group toward its particular set of camp officers was very difficult to estimate, and the material so far obtained corresponds in no way to the symbolic derivatives that are necessary for interpretation of processes. The wakicunsa fulfill in their districts about the same function as on these trips, although here they are clothed with solemn tradition and the extra power allotted to former wakicunsa.[11] Also most wakicunsa are chiefs of their bands. Perhaps these facts explain why there was little or no observable difference in the attitude of each group toward its wakicunsa—an attitude of great respect and deference. The attitude toward the committee, on the other hand, was more varied. The greatest power was acknowledged them at the Fourth of July celebration held in the district itself. This is the only time the traditional camp circle is now used.[12] This affair comes near the time of the former Sun Dance and arouses much talk of "old times." The "committee" is chosen by the head men of the district, and includes a president, vice-president, secretary, treasurer, and subsidiary members. They seem obliged to consult no one and are in absolute power during the course of the three or four days of celebration. They ride around on horseback as lords of the affair. The committees concerned in the small traveling camps have no such power, although they fulfill the same function of management and control. Their restraining powers are exercised mainly

[10] The same man is trying to introduce a new variety of corn among his people.

[11] One of the best pictures we have of the former summer life is in Francis Parkman's Oregon Trail. In 1846 he traveled three weeks with an Oglala Teton-Dakota camp.

[12] The annual Sioux rodeo, recently started near Pine Ridge agency, also employs the circle.

to remove men who have been drinking too much—a surprisingly rare emergency.[13]

Altogether, whatever powers the committee, the wakicunsa, or the chief may have, there is certainly a minimum of observable friction in these camps. Open quarrels of any kind are surprisingly few. The only one witnessed was the start of a fight between two men. Each was led aside by influential persons to talk the matter over. Afterward the two men met and conversed as if the affair were forgotten. The only other case of disturbance occurred one night when two intoxicated Indians entered the camp looking for trouble. On inquiry it was explained that they were from a different district of Pine Ridge and had no close relatives in camp, so that there was no jurisdiction for control.[14] These two occasions were the only instances of trouble observed during the five months.

Obviously there is a distinct political organization functioning at the present time which bears certain resemblances to what we know of the older forms. In the larger gatherings there are, however, some fundamental differences between the old and the new which should be pointed out in order to avoid confusion. An important one is in the character of the camps. The make-up of the present-day camp is smaller, not comprising as many bands, or a complete division of the tribe, as did the ancient summer camp. The 1930 groups are selective in the sense that they are composed of those who *want* to go, there being some who prefer to remain. This latter decision is economically possible within their present culture limits. The other difference of importance concerns the objectives. There may be ancillary motives that would be similar, such as the education of children in tradition by pointing out landmarks and telling their stories. This certainly is a conscious procedure on the part of the grandmother and grandfather today and may well have been in the past. But the main point is that today it is to attend a rodeo; in former times to hunt. These two differences, one, the character of the group, and two, its objective, would have to be kept in mind when making any comparison between the present and the past.

On the basis of what has just been outlined as a concrete instance of culture functioning, there might now be enumerated some of the problems arising when culture is viewed from this angle of interest.

[13] Methods allowed to them are: (1) to admonish him; (2) to tie such a man in his own tent until sober; (3) to put him under arrest and escort him to the town jail. The latter expedient is very seldom used, as the Indians naturally like to handle their own affairs *inter se*. It was resorted to once in the summer of 1930. A man became unmanageable on the main street of the town, a half mile from the camp, and any other expedient was out of the question.

[14] Even if this were not a true statement of the actual facts, it defines the limits of authority as conceived by the Indians themselves.

1. Could this nomadic, restless tendency be called a culture trait which has been passed on from generation to generation in the same manner as the berry-pounder or levirate?

This question involves the problem as to how deep-set the seasonal rhythms in a culture group can become. Certainly those few younger Indians who could assume a perspective were convinced that the summer moving about was "in the blood," but was decreasing in intensity from generation to generation. On the other hand, distinct incentives to that form of life, explicable in the present, must not be overlooked. A people having no definite occupation for body or mind must surely possess surplus energy, which may easily take the form of gadding about.[15] Also, Indians are quite affectionate in their family relations, so what more natural than to visit some distant relative, or travel with him to a rodeo—especially if his larder be better plenished than theirs. Finally, the towns arranging these spectacles offer inducements to attract Indians.

Altogether the question resolves itself into whether sufficient stimulus now exists to account for the nomadism, or whether these stimuli are merely reenforcing some deep-set cultural tendency. Posing the problem in this fashion, what techniques would lead to a satisfactory solution?

2. What forces are at work for and against the continuance of this nomadic summer life?

An academic division of exoteric and esoteric forces might profitably be made. An estimate of the esoteric forces at work would largely depend on a satisfactory solution of problem 1. The exoteric involve a struggle over the Indian between those white people who are reformers and those who are exploiters of the Indian in that particular environment. The educators and missionaries naturally endeavor to put the Indian to work, while those in towns entice him away. In a long-drawn contest the former will probably win out, as the brunt of civilization is on their side; yet the internal forces must be understood in order to gain a true picture of what is taking place.

3. If the government enforces its ruling against Indians attending such rodeos, what form or outlet for summer restlessness would the Indians adopt, taking into consideration their contemporary culture patterns? Or is this restlessness so vague, so little insistent, that no new group outlet would be developed?

Again one is forced to consider problem 1. The nature and strength of this restlessness would have to be known. If a group outlet were used, it

[15] This surplus, however, is not as great as one might think, since they are at best malnourished.

would probably originate from something already present—as larger and more frequent gatherings for dances. The best that can be done is to gather as much information on the present as possible, so that in case this emergency should arise, the new developments could be studied intensively for the light they would throw on culture processes.

4. What can be postulated for the future change in organization on the basis of the present, should such group traveling persist?

This involves: (1) a study of existing variations and their etiology; (2) a study of the ancient organization in relation to the present, keeping in mind what little history is known; and (3) a survey of the attitudes, concepts, and values held now by various factions and individuals toward specific traits in the contemporary and ancient organizations. The actual gathering of data is not the difficult part of this problem—it is the proper treatment of them.

5. If techniques be devised for answering this type of problem for the whole cultural content of a people, and be applied to many ethnographical areas, what would be the possibility of formulating laws of culture processes?

This, of course, is the goal to be kept in mind when making any concrete investigation centering on the problem of culture change—anything less is idle curiosity, however interesting. Nevertheless, at present neither sufficient data nor adequate tools are available with which to formulate general statements or laws. The solution of this type of problem is quite necessary to social science, if its ultimate aim is really to seek knowledge of how society functions—whether or not for the purpose of control. The value of defining the goal lies in thus establishing a criterion for the *relevancy* of the concrete data that must still be filed away for eventual use. Some ideational system is needed to prune the unessentials and control artificially the variables. Perhaps a "culture man" will be invented, corresponding to the economic man in economics in order to differentiate modal behavior; or it may be feasible to construct a "culture geometry" built up from single concepts and axioms. Certainly something should be attempted before our anthropological laboratories, the "primitive cultures," have become less useful or have entirely disappeared.

In conclusion it may be wise, although perhaps trite, to defend a study of culture process—especially from the viewpoint of change. A now hackneyed sentiment is that man has learned to control the material factors of the world and yet has so far failed to direct the formation of the cultural or social meanings these factors bear in his life—a failure serious in its social context in proportion to the rate of increase in new material products. Con-

trol involves a knowledge of process as well as of objective—whether in the physical or social sciences. May not something at least be learned about culture processes through a study of change in civilizations alien to our own? Probably it is idle to hope that the contexts will be much less complex than our own, yet at least such cultures afford our only hope in establishing comparative laboratories for the study of social laws as necessary to existence as those of physics.

INSTITUTE OF HUMAN RELATIONS
YALE UNIVERSITY
NEW HAVEN, CONNECTICUT

ORIGIN AND DEVELOPMENT OF THE BURIAL MOUND

By E. F. GREENMAN

THE origin of the custom of burying the dead in mounds of earth has not commanded much attention in recent times. Probably this is due to preoccupation with the tracing of mound cultures by comparative study of artifacts, and to the fact that the search for origins has gone out of fashion. Now, however, that we have a fairly good idea of the content of the various mound cultures, some speculation upon the manner in which the dead came to be buried in mounds instead of graves may not be amiss. To define the latter term: grave burial is the presence of human remains beneath the surface of the ground in a filled-in compartment, no portion of whose structure lies above the surface. In our approach to the question it is scarcely necessary to offer evidence that, for the world as a whole, grave burial is the older form.

In attempting to account for the origin of mound burial, three kinds of explanations have come to the attention of the writer: those assuming an objective origin; those dealing entirely with the subjective element; and those which picture the trait as arising from interplay between the two elements.

In the first group are three. The mound concept may have arisen from the inability to use all the earth from a grave in filling it in after the body had been put in place. Second, the true burial mound may have resulted from the practice of entombing the dead in its own former dwelling, causing the whole to be consumed by fire and, sooner or later, erecting a new dwelling structure on the same site, repeated performances of the same cycle resulting in a respectable mound. Certain mounds of the Lower Mississippi valley suggest such an origin.[1] Third, while he makes no mention of mounds used specifically for burial, Swanton[2] attributes the origin of certain enclosures in Oklahoma, a foot or two in height, to a custom of the Creek Indians of sweeping off the "busk-ground" or ceremonial dance ground, several times each year, pointing out that "the earthen ridge is in the nature of an 'accident' resulting from a certain custom." He says further:

[1] Cyrus Thomas, Report on the Mound Explorations of the Bureau of Ethnology, BAE-R 12:207, 1890–91. The burning of houses in which a death had occurred was observed by Le Moyne in a Timucuan village in Florida before 1591. See David Bushnell Jr., Native Cemeteries and Forms of Burial East of the Mississippi, BAE-B 71:118, 1920.

[2] John R. Swanton, The Creek Indians as Mound Builders, AA 14: 320–324, 1912.

Other mounds are formed accidentally around trees or other obstructions, the refuse piling up against them instead of being swept past. . . . Conscious mound-building does occur, however, in the mound for the ball-post or the ceremonial dances, and, going farther back, William Bartram informs us that anciently the ballground or "chunkyard" as he terms it, was between the "big house" and the hothouse, and that each of these latter was placed upon an artificial mound.

The inclosures referred to were made "between the time of the removal of the Creek (1836–1840) and 1871."

To the second group belongs, first, the possibility that a small pile of earth was erected over a grave as a marker by a small band wandering in unfamiliar country. Second, the simple idea of an eminence with some symmetry and definiteness may have impressed the primitive mind as the proper place to bury the dead, for reasons not unfamiliar to ourselves. Graves are often found in the tops of natural knolls,[3] and indigenous burials occur near the apices of some of the larger conical mounds, well above the floor. Third, there are many instances in which occasional passers-by have stopped to add more earth or stones over a grave for reasons of a symbolical nature. A mound would result from this process. Fourth, the mound may have arisen from the desire to keep the dead from returning to molest the living; the bigger the pile of earth the less chance of such a contingency.[4]

The two explanations based both upon the subjective and the objective are as follows: First, if a small group accustomed to burying their dead in small knolls moved to some situation, perhaps the broad flood-plain of a river, where there were no elevations within several miles, they would possibly conceive the idea of an artificial knoll for their graves in the desire to perpetuate their burial custom. Second, the custom of piling earth over the dead may have arisen in the desire to avoid digging down into the hardpan.

There are two aspects of the custom of mound burial upon which we may be certain. First, that it had an origin; and, second, that it continued to exist. Whatever the importance of these several explanations with regard to the most complicated forms of burial mound, it is fairly obvious that they describe methods by which true mounds could have been, and probably were, erected. Those in the first group however, together with the first one in the third group, tell us nothing of the manner in which mound burial developed into a stereotyped custom passed on from genera-

[3] Among the Tunica in historic times cemeteries were placed on hills in the open country. See John R. Swanton, Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico, BAE-B 43 : 324, 1911.

[4] Roheim accepts this and the preceding explanation. See Gaza Roheim, Social Anthropology, 353, 356, 332, 1926. Boni and Liveright, New York.

tion to generation. In those explanations comprising the second group, as well as the second one in the third group, there are elements which would tend toward acceptance and continuation of the custom. Certain features of mound burial in North America favor its explanation as an expedient to avoid digging into the hardpan. This explanation will therefore be considered in detail.

As to the term "hardpan," books on geology have very little to say of it.[5] As here used it describes the firmly-textured, well-packed earth, often with a considerable content of clay, which lies from one to three feet beneath ground surfaces in their primeval state. Above this, comprising the zone of weathering, the soil is loose and made up largely of material resulting from vegetable decomposition. The hardpan underlies the zone of weathering in the majority of places in the mound-area of the United States wherever one may choose to penetrate with the shovel. Gravel banks and sandy areas such as that of northern Michigan differ at this level only in degree of hardness, and of course one may occasionally be fortunate enough to strike deposits of water-washed sand where the going is good. The frequent occurrence of graves in gravel banks and isolated sandy spots of glacial origin is in itself sufficient to show that easy digging was an element in the selection of burial sites with some at least.[6]

Beyond the zone of weathering, however, digging with primitive tools[7] was never easy in any case, and it is possible that depth was given to a grave by piling earth above the surface, obtained from above the hardpan. The logical mode of transition from grave to mound burial would seem to be that of digging a grave down to the hardpan and then gathering earth from above the hardpan in the immediate vicinity, piling it over the filled-in grave into a mound. The next developmental step would involve laying the dead on the surface of the ground and heaping over it earth from the surrounding zone of weathering. The higher the mound, the larger the area

[5] "Hardpan is an indefinite term usually denoting a relatively hard or impervious layer beneath the soil or in the subsoil. In regions of scanty rainfall hardpan is very commonly of lime or magnesium carbonate where it may be due to scanty gravitational water which carries the materials downward to certain depths where they are deposited, or it may be due to rising capillary water. In many cases the hardpan is probably due to both processes . . . . In humid regions hardpans often form in the subsoil where the fine materials of the subsoil are cemented by lime carbonate or by iron oxides." (F. V. Emerson, Agricultural Geology, p. 129, 1920. John Wiley & Sons, Inc., New York.)

[6] In the Boulia district in Australia "the depth of the grave varies with the nature of the soil" (Roheim, *op. cit.*, 354).

[7] The early literature often refers to the use of pointed sticks for digging graves. See for example, H. C. Yarrow, Mortuary Customs of the North American Indians, BAE-R 1:125, 1879–80.

from which the top-soil would be stripped; so that a small mound would increase in height by a double process. Whether or not such easy reasoning as this has any relationship to the actual passage from grave to mound burial, we may never know. But we have these two types of burial mound in the Mississippi valley, namely, the Hopewell and Adena.

It will be asked why it was necessary to dig beneath the hardpan in the first place. It seems probable that, whatever the manner of its origin, the mound trait was accepted and continued in part at least as a result of the desire for a deeper grave as a security against vandalism both animal and human.[8] As we know, objects which must have represented great wealth to their owners are found in burial mounds by the hundreds. It is in fact difficult to conceive that any people, primitive or otherwise, would for any long-continued period confine artifacts of the quality found in the larger mounds in shallow, sandy, unguarded graves. It is perhaps of some significance in this connection to note that in the Turner Group of Earthworks, Hamilton county, Ohio, where the majority of burials were in shallow graves, the richest find was a ceremonial cache in a mound fourteen feet in height.[9]

It is often erroneous to suppose that a material trait was brought into being to perform the function which it appears to perform when first observed by the outsider. Rivers says:

> I am quite prepared to consider whether even such a practice as burial, which seems to have so obvious and utilitarian a purpose, may not have really come into being from some quite different motive.[10]

While there is no doubt that the subjective has played perhaps the major part in the formation of burial traits the world over, few will deny that environmental conditions have not only been of some importance but have at times been entirely responsible for the fundamental aspects of certain traits. An instance of this is the platform or "box" burial practiced by the western Eskimo in Alaska,[11] owing to the permanently frozen condition

[8] Reference to the digging-up of bodies by animals may be found in the following: Cadwallader Colden, History of the Five Indian Nations, part I, p. 5, 1866; T. H. Morrell, New York. John Heckewelder, History, Manners and Customs of the Indian Nations, Philadelphia, Publication Fund of the Historical Society of Pennsylvania, p. 275, 1881. Bacqueville de La Potherie, Histoire de l'Amerique Septentrionale, 2:43, 1753.

[9] C. C. Willoughby, The Turner Group of Earthworks, Hamilton County, Ohio, PM-P 8:33, 1922.

[10] W. H. R. Rivers, Psychology and Ethnology, p. 43, 1926. Harcourt, Brace & Company, Inc., New York.

[11] Ales Hrdlička, Anthropological Survey in Alaska, BAE-R 46: 77, 1928–29: "Due to the impossibility of digging sufficiently deep into the frozen ground the western Eskimo buried their dead near or on the surface or among rocks."

of the ground. We find a similar determination of burial customs among the Koryak in Siberia, where underground burial is equally difficult. The Koryak normally practice cremation, but those tribes who live in a treeless country throw their dead into the sea.[12] Until otherwise explained, these instances must stand as the results of environmental conditions.[13] Whether or not such practices were formed consciously is another question. Despite certain objections to such a process, the "first" burial mound will for the moment be regarded as a result of a conscious desire to avoid the laborious and time-consuming procedure of digging beneath the hardpan. A comparison of certain aspects of Hopewell and Iroquois cultures will throw some light on our subject.

The Hopewell is known only by the method of archaeology, from the excavation of burial mounds. No village sites, recognized as such, have been found. But whatever may have been in the complete picture of that culture, it is certain that the cult of the dead certainly occupied a very considerable part. This conclusion is necessary when we consider the great size of their burial mounds, the elaborate preparation of individual burial platforms, the abundance and richness of mortuary tributes. The Hopewell people must have spent a good share of their time, energies, and properties in the care of the dead. The important thing in this specialization is that it implies the existence of a high regard for the physical condition of the remains of the dead, as well as for their welfare in the after life. This solicitude in its double aspect may well have motivated the desire for a deeper grave at a time when this people were not yet builders of mounds; and the desire may easily have been realized with the result of bringing the hardness of the hardpan forcibly to their notice. If a burial mound did not immediately result, perhaps the first response was to dig deep graves only in special cases. At any rate, our speculations so far demand the eventual appearance of the "first mound-builder" upon the scene, who either laid the dead on the surface or dug a hole in the ground in the usual manner, and heaped a mound over the remains in the manner already described.

Turning now to the Iroquois, who were not builders of mounds, archaeological evidence—the shallowness of their graves[14] and the comparative

[12] Effie Bendann, Death Customs, p. 222, 1930. Alfred A. Knopf, New York.

[13] In this connection there seems to be no reason against calling scaffold and tree burial the product of an environment where the ground was frozen the year around. Conversely, mound burial, which demands a loose condition of the earth, might with a good deal of reason be regarded as southern in origin.

[14] A. C. Parker, The Archeological History of New York, pt. 1. N. Y. State Museum Bulletins 235, 236, 1922. Of the burials described herein the least depth was 8 inches; greatest depth 72 inches; average 32 inches

scarcity[15] of their mortuary tributes—shows that they did not have as high a regard for the dead as did the bearers of the Hopewell culture.

The prevalence of flexion in Iroquois burials[16] has an important bearing upon the question before us. This phenomenon was discussed at considerable length by Richard Andree, a German ethnologist, in 1907.[17] He came to the conclusion that flexion is the result of tight binding of the corpse in a doubled-up position to insure against the return of the dead to torment the living. This hypothesis was ably supported "through direct explanations from the lips of those primitives who still use this custom."[18] In discussing the explanation of flexion as a labor-saving expedient, however, several authentic examples are cited in which it was stated explicitly by members of other primitive groups who practiced the custom that they did so for that reason, and the author admits that "here and there" flexion was practiced as a labor-saving device. While flexion has been submitted to a variety of explanations,[19] the labor-saving theory must command some respect. It is interesting to note in this connection that most of the skeletons found in burial mounds in this country are extended rather than flexed,[20] for where mound burials are on the surface of the ground, as is true in most cases, there would be no need of flexion as a labor-saving expedient.[21]

In a report upon some prehistoric graves in Massachusetts, H. H.

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[15] A. C. Parker, *op. cit.*, 246. At the Ripley site, out of 108 burials, 39 were without artifacts, and 42 were accompanied by pottery vessels only.

[16] A. C. Parker, *op. cit.* Out of a total of 222 burials described only 6 were extended. The rest were flexed with the exception of 20 or 30 in ossuaries.

[17] Richard Andree, Ethnologische Betrachtungen über Hockerbestattung, ArA 6: 282–307, 1907.

[18] Richard Andree, *op. cit.*, 307.

[19] G. Roheim, *op. cit.*, 340: "In Wetar (Indonesia) small carved wooden images called 'jene,' which represent human beings in the doubled-up position in which the dead are interred, and which is so characteristic of the human embryo, are regarded as embodiments of the soul."

[20] Cyrus Thomas, Report on the Mound Explorations of the Bureau of American Ethnology, BAE-R 12, 1894. Out of a total of 1256 burials in mounds described by Thomas, 717 are extended, 106 flexed, 125 bundled, 91 sitting, 6 "standing," 13 "squatting," 6 cremated, and 192 indeterminable. Thomas describes the contents of mounds in 20 different states.

[21] Some light is thrown upon the meaning of flexion to the mound-builder in the account of the contents of mound 12 of the Turner Group of Earthworks in Hamilton county, Ohio. This mound contained 4 extended and 3 flexed skeletons, all adults. "With all the skeletons occupying a horizontal position, relics were recovered, and great care seems to have been taken in their interment, as they were placed either on a bed of sand, gravel, or flat stones. While with those that were interred in a doubled-up position, no relics were found, nor was there evidence of special care being exercised in their burial." (C. C. Willoughby, *op. cit.*, 85.)

Wilder and R. W. Whipple[22] agree with Andree that flexed burial results from binding the body tightly to prevent the return of the dead to "alarm or torment the living." Since the writer can find no mention of flexion in the literature of Iroquois ethnology,[23] it might be regarded as unfair to give references from that source contradicting the origin of flexion in fear of the ghosts of the dead, if it were not for the fact that there is likewise no mention of such fear. Further, according to Morgan:[24]

> The Iroquois had a dance for the dead in which the spirits of the dead were thought to return and join in.

The same authority reports another feature which bears somewhat upon our problems:

> A superstitious custom prevailed of leaving a slight opening in the grave, through which it [the spirit] might re-enter its former tenement.[25]

It may also be pointed out that the placing of stone celts and flint blades with the dead is incompatible with a universal fear of their return. Yet the Iroquois placed such implements in their graves.[26]

If we accept the labor-saving explanation of flexion we are forced to admit that the Iroquois had very little of the idea that the living could or should do anything for the dead after they were buried, in comparison to the Hopewell people. They apparently buried their dead in the easiest manner possible with no thought of guaranteeing eternal peace to their bones, and continued the custom until their culture was transformed by European colonization. What piling up of earth they did was of a defensive nature. The Hopewell people on the other hand augmented their heaped-over cemeteries with symmetrical walls of earth, which appear to have been of a symbolical rather than defensive nature, representing the highest culmination of their regard for the sanctity of the grave.

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[22] H. H. Wilder, R. W. Whipple, The Position of the Body in Aboriginal Interments in Western Massachusetts, AA 19: 372, 1917.

[23] "At one period they [the Iroquois] buried in a sitting posture with the face to the east. . . . Another and more extraordinary mode of burial anciently prevailed mong them. The body of the deceased was exposed upon a bark scaffolding, erected upon poles, or secured upon the limbs of trees, where it was left to waste to a skeleton. After this had been effected by the process of decomposition in the open air, the bones were removed, either to the former house of the deceased, or to a small bark house by its side, prepared for their reception." Lewis Morgan, League of the Ho-de-no-sau-nee or Iroquois, 1: 275–276, 1901., Dodd, Mead and Company.

[24] Lewis Morgan, *op. cit.*, 275–276.

[25] Lewis Morgan, *op. cit.*, 170.

[26] A. C. Parker, *op. cit.*, 260–263.

Granting that our explanation of the origin of the burial mound is correct, we see that, on the one hand, a highly developed mound culture exhibits and results logically from an elaboration of the same basic motive which lay behind the erection of the "first" burial mound; on the other hand that the lack of this motive—the absence of preoccupation with the dead on the part of the Iroquois—offers a logical explanation of some of the most important features of their burial customs.

The hardpan theory, as we have stated and examined it, implies a high degree of conscious direction, a determination of a course of action by a feeling for expediency in which the accidental element played no part. We have compared the simple grave with the burial mound, and by noting the advantages of the latter, affirmed that it was consciously created because of those advantages. But neither of these lines of reasoning is entirely satisfactory. It is not necessary, however, in order to maintain the validity of the hardpan theory, to suppose that the "first mound builder," exhausted from his labors in digging a deep grave, sat on the edge of his excavation and evolved the mound concept out of hand. The trait probably originated in a more or less mechanical accident or by-product which was once and once only caught up and fertilized by a special set of social customs or mental attitudes gathered together into a single group of people. According to this view, the idea of a mound of earth over the grave may have suggested itself accidentally to a group of people who adopted it in solution of their desire for a deeper grave. Very likely the accidentally-formed mound, instead of at once suggesting its use and continuance, led the beholders to formulate a new theory of burial symbolism unconsciously (or the idea of a mound may have been emphasized simply by verbal reference to the mound), which in turn and perhaps only in time, reacted upon the environment with the result of duplication of the original mound, while at the same time the individuals concerned thought their altered theology the antecedent, and the mound of earth the consequence. Under this state of affairs, at first the mound would be formed accidentally, or at least unconsciously; later it would be built in obedience to ritual;—an important change, for it would mean that if the fear of vandalism lay behind adoption of the custom, mounds would still be built where there was no danger from that source.

Aside from all speculation, whatever may have been the actual origin of mound burial, diverse factors probably operated in its continuance, over and above whatever ritual demands or practical considerations there may have been. Among these is one which seems to the writer of some importance. The erection of a burial mound was a procedure involving the

coming together of the surviving members of the group in a single enterprise highly charged with activities of a physical nature at a time when the group had been touched by the mysterious hand of death, when its members would unconsciously welcome an excuse to come physically close to one another as in all times of danger; the present danger being that of death, they would find further relief in manifesting the physical properties by which they lived and thereby (perhaps through some rule of primitive magic) to lay raw and violent hold upon life. The resulting mound, outstanding from the earth, would serve as concrete proof of their momentary victory over the ultimate catastrophe. In comparison with grave burial, the duration of this process of unconscious symbolism would be prolonged, and at the same time without so great a physical effort, in the case of a small mound at any rate, as to make physical progress too slow for the spirit. Apparently the primitive custom of feasting and dancing after funerals is due in some measure to this unconscious desire on the part of the assembled survivors to engage in activities which stand for life, for animation, for negation of the calamity which has just been visited upon a member of the group.

The expansion and development of mound burial seems at first quite understandable to the modern mind, accustomed as it is to the "bigger and better." But the problem is not as easy as this. While we have no definite proof, it seems reasonable to believe that the earliest burial mounds were small and that after adoption of the trait there followed a progressive quantitative development which produced mounds seventy feet or more in height. Probably the increase in size and complexity of mounds accompanied and arose from an increase in importance of the cult of the dead; more specifically, perhaps by an increase in the value and number of mortuary tributes.

Just why this development of spectacular forms out of simple beginnings took place is one of the most interesting features of mound burial. The shallow graves which we find in the mound area, those of the Iroquois for example, did not give rise to graves fifteen feet deep. In fact, if graves three feet in depth gave rise in time to graves proportionately as deep as the seventy-foot mounds are high they would extend down into the earth one hundred and five feet, supposing that the original mounds were two feet in height. Evidently, if a cult of the dead demanded larger and more ornate homes for the dead, the hardpan and other considerations attending hundred-foot holes in the ground forced such expansion above the surface. It is significant in this connection that in North America the only radical elaboration of sub-surface graves which still retains the fundamental fea-

tures of the simpler graves, which are mere holes in the ground, is a feature of the Adena culture, which is a mound-culture, and is close enough to the Hopewell to be regarded as an archaic form of that culture. The typical Adena sub-floor burial chamber is rectangular, ten or fifteen feet in length, nearly as wide and about six feet in depth. In the original Adena mound there was a similar sub-floor chamber containing burials, while burials were also found above the floor in the body of the mound.[27]

Since the Adena people practiced sub-surface and true mound burial at the same time, they provide us with an early stage in our scheme of development of mound burial, a transitional stage between grave and mound burial characterized by high development of the *mound* while the grave was still retained, *but much deeper and in a highly elaborated form.* The Adena appears to be older than the Hopewell by comparison of other features than those of a structural nature. The former, for example, were users of copper, like the latter, but for ornamental or symbolical purposes only.[28] Of course one might say that the Adena represents the amalgamation of two peoples, one burying in sub-surface graves and the other in mounds. This may have been the case. But one cannot determine such a matter on archaeological evidence alone.

To summarize: The mound building trait is the product of four circumstances which, listed in what is believed to be the order of their occurrence, are as follows: (1) High regard for the sanctity of the grave made necessary (2) its protection from vandalism, animal or human, which could be effected only by deeper graves and when (3) the mound was either consciously conceived or suggested accidentally in one or more of a number of ways, (4) it was accepted as a solution because of the difficulty of digging beneath the hardpan.

Mounds of the Adena type, with large sub-floor tombs, exemplify a transitional stage between grave and mound burial.

Once the mound building trait was formed, factors additional to those responsible for its adoption operated to insure its continuance.

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[27] W. C. Mills, Explorations of the Adena Mound, Ohio Archaeological and Historical Quarterly, 10: 452, 1902.

[28] H. C. Shetrone, The Mound Builders, D. Appleton and Co., New York, 1930; The Culture Problem in Ohio Archaeology, A.A. 22:159–161.

A CENTRAL MEXICAN INSCRIPTION COMBINING MEXICAN AND MAYA DAY SIGNS

By B. L. WHORF

WHEN in Mexico during the winter of 1930, engaged in Nahuatl linguistic research, I visited the village of Tepoztlan in the state of Morelos and while there made the accompanying sketch (fig. 1) of a band of sculptured figures in the ruined temple of the Tepoztecatl, the ancient tutelary deity, which stands on a great rock pinnacle overlooking the town.

The temple has been described by Saville,[1] Seler,[2] and Novelo,[3] but nowhere do any of them discuss the figures dealt with herein. The structure bears indications[4] of dating from the reign of the Aztec king Ahuitzotl, who died in 1502; but as the figures in question show likenesses to forms known to be over a thousand years more ancient than this, it may be that in the building of the temple they were carved in obedience to artistic traditions, or copied from older architectural work of this region. They form a band extending along the top of a much more conspicuous frieze of larger carvings on the inner walls of the inner room or court. My sketch and remarks apply only to a clearly preserved portion of the band in the southern half of the court.

Stylistically and on the basis of general probabilities the figures would, I think, strike any student as a band of the day signs of the tonalamatl, such as one sees continued interminably along with the successions of pictures in the Mexican codices. But many of the signs bear little resemblance to their Mexican form, the form corresponding to the Aztec names Cipactli, Ehecatl, Calli, etc. Nevertheless, as we shall presently see, the signs Acatl, Malinalli, and Atl are in practically their regular Mexican forms, and to clinch the matter are precisely the correct number of signs apart. But moreover, and here the unusual enters, some of the signs bear an unmistakable likeness to the quite un-Mexican-looking Maya forms, corresponding to the Maya names Imix, Ik, Akbal, etc., and these signs, too, are in exactly their proper places. The ruin is of course far removed from historical Maya territory, being only about forty miles from Mexico City in a region of Toltec and post-Toltec influence.

[1] AMNH-B, 1896; also Monumental Records, February, 1898.

[2] BAE-B28: 347; Die Wandskulpturen im Tempel des Pulquegottes von Tepoztlan, Gesammelte Abhandlungen, 3: 487.

[3] Guia para Visitar las Principales Ruinas Arqueologicas del Estado de Morelos, Publ. Sec. de Educacion, Publica 3, 1929.

[4] See Seler, BAE-B28.

As I sketched the figures their general un-Aztec look quickly struck me, but the first clear impression that I was drawing a *Maya hieroglyph* came when I began to copy the sign figure 1, no. 10. Comparison with a very common Maya hieroglyph, whose most usual form is that shown in figure 2, no. 10, indicates the similarity. The Maya sign is a hand having the distinctive characteristics of a prominent thumb more or less opposed toward the fingers, and invariably on the wrist a circle usually having a central dot and a small tag-like projection from the rim. The fingers are usually bent toward the thumb, but there are forms on the Maya monuments in which they are extended straight as in the Tepoztlan figure. This sign is a hieroglyphic element of wide and varied use, but it is especially a grapheme[5] that stands for the day sign Manik. In the Mexican day-sign system there is no grapheme even remotely resembling a hand. The sign corresponding to Manik is called Mazatl, and its grapheme is a deer's head (figure 2, no. 9).

Can it be that this Tepoztlan hand-figure represents Manik-Mazatl? Do the other signs fall into the proper places required by such an assumption? Let us see. In both day-sign systems the sign before Manik-Mazatl is called by a similar name, Cimi in Maya and Miquiztli in Aztec, both meaning "death." The grapheme in both systems is a death's head or head of the death god, stylistically different, however, in the two systems. Figure 2, no. 5 shows the Aztec type of grapheme, a fleshless skull; figure 2, no. 6, the Maya type; and figure 2, no. 7, the hieroglyph of the Maya death god as it appears in the Maya codices. Now the direction of Aztec and Maya writing is like our own, from left to right. The figure to the left of the hand (figure 1, no. 9) bears no resemblance to Miquiztli or Cimi. But the figure to the *right* of the hand (figure 1, no. 11), strange to say, shows a most curious likeness to the hieroglyph of the Maya death god. The two prefixes attached to the head are especially characteristic of this grapheme, indeed are found nowhere else. The Tepoztlan glyph however has a suffix that is not found in the death-god grapheme, but which is an element in other Maya hieroglyphs. It is particularly characteristic of the month-sign Kankin, and according to Seler represents a human skeleton. It seems to be related to the skeletal representation shown in figure 2, no. 8, taken from figure 115, page 86 of Spinden's *Maya Art*, where Spinden treats of the artistic symbolism of bones and death among the Maya.

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[5] Grapheme is a word formed on the analogy of morpheme, semanteme, to denote any written symbol, especially as a linguistic factor, in place of "ideogram," "pictograph," or the ambiguous "character." In discussing hieroglyphs it is desirable to have a term that does not presuppose anything about the nature of the denotative process employed.

The fact is, as will soon be proved, that we have here an inscription which for some unknown reason is written in reverse order, from right to left, and this death-god sign stands for Cimi-Miquiztli. Once this is realized,

FIG. 1. Inscription in the Temple of the Tepoztecatl, Tepoztlan, Morelos, Mexico.

the student of the subject will soon notice another out-and-out Maya sign, namely the ninth figure to the left of the hand, figure 1, no. 1. In the Mexican system the ninth sign after Mazatl is called Cozcaquauhtli, and its

FIG. 2. The Mexican and Maya day signs from Coatl-Chicchan to Cozcaquauhtli-Cib in their order. Bibliographic references: 1, 9, 11, 15, 17, 19, 23, and 26 from Sahagun ms.; 2 and 5 from Zouche Codex; 12 and 31 from Fejervary-Mayer ms.; 14 from Codex Telleriano-Remensis; 21, 24, and 29 from Seler's Caractère des Inscriptions; 3, 4, 6, 13, 16, 18, 20, 22, 25, 27, 28, 30, 33 from Morley's Introduction to Maya Hieroglyphs—3, 18, and 28 inscription forms from p. 38, 33 an inscription form from p. 95, the others codex forms from p. 39; 7, hieroglyph of death god, from Dresden Codex, p. 15; 8, representation of human skeleton from Uxmal, from Spinden's Maya Art, and 32, Codex Peresianus, from Spinden's Maya Art, p. 94; 10, from Codex Tro-Cortesianus; 18a, Maya hieroglyph based on dog's head and related to Oc (18), from Dresden Codex.

grapheme is the head of a vulture (figure 2, no. 31) or of an eagle wearing a collar. In the Maya system the ninth sign after Manik is called Cib, and its grapheme (figure 2, nos. 32 and 33) is a curved line like a question mark or sometimes rather like a letter C turned over or turned backwards. This last is the form of the Tepoztlan figure.

The two dots beside the curve are not found in the Maya Cib, but they nevertheless confirm the identification. Seler, from the fact that the sign Cib was often represented on liquor vessels, connected it with a similar sign placed by the Aztec on their drinking vessels and called ometoch, from the god of intoxication Ome Tochtli, literally Two Rabbit. This god is often represented (e.g., Sahagun Madrid Manuscript, under his name Totochtin) carrying a shield with a sign very similar to the Tepoztlan figure. An Aztec note on the Sahagun picture says that the god bears an "ometochchimalli," that is, "shield with the device Two Rabbit." In our present case the two dots are merely the usual expression of the number part of such a name as Two Rabbit. Ome Tochtli and Tepoztecatl are considered to be the same or related deities, so that their especial cult in Tepoztlan might perhaps employ their emblem as a day-sign grapheme when it would not be so employed elsewhere. The point is that they should have employed it, not for Tochtli or Rabbit, but for Cozcaquauhtli or Vulture, of all signs the one corresponding in position to Maya Cib.

Let us check the positions of the other signs proceeding from no. 10, or Manik, toward Cib. No. 9 is too worn to be distinctly recognizable as anything, yet by comparison with the form of the Mexican sign Tochtli, shown in figure 2, no. 12, it will be seen to resemble a worn-down carving of this form.

The next sign, no. 8, is crowded against the following sign no. 7 and is placed in an angle where the band turns the corner of the wall. If compared with the grapheme of the Aztec sign Atl (Water) shown in figure 2, no. 14, the likeness will be evident.

No. 7, the next figure, occupies the place of the Aztec Itzcuintli (Dog) and the Maya Oc. It shows a head that looks more like a toucan or some such bird than a dog. It certainly shows little resemblance to the naturalistic dog's head (figure 2, no. 17), the grapheme for this day sign in the Mexican system. Now a toucan-like conventional head, shown in figure 2, no. 18a, is one of the commonest hieroglyphic elements in the Maya codices, and Beyer[6] has shown that this conventionalized head is derived from that of the dog. The Maya day sign corresponding to Itzcuintli is called Oc, and has two distinct forms of grapheme. The form of the codices has no

[6] AA 31, 1929.

resemblance to the Tepoztlan. The form of the Maya inscriptions, shown in figure 2, no. 18, may be compared with the Tepoztlan form. The dog hieroglyph may be further compared in that it always bears a suffix containing a two-lobed figure, while the Tepoztlan glyph shows suffixed to the head a square frame containing a two-lobed figure.

Sign no. 6 shows a certain resemblance to the Maya Chuen, figure 2, no. 20, and is quite unlike the naturalistic monkey head of the Aztec Ozomatli (figure 2, no. 19).

Sign no. 5 agrees with the Aztec grapheme for the same position. Although it is much worn and a cavity in the stone seems to have been scooped out of a part of it, the brush of tongue-like streamers characteristic of Malinalli is recognizable. (Cf. the form of Malinalli shown in fig. 2, no. 21). Here there is no trace of the Maya form (Eb, fig. 2, no. 22).

Sign no. 4 shows in proper position the distinctive features of certain forms of the Mexican Acatl. (Cf. especially the form shown in fig. 2, no. 24.) The Maya Ben, figure 2, no. 25, is quite different.

Sign no. 3 however is a very strange one. It is certainly nothing like the Mexican Ocelotl, a jaguar head, figure 2, no. 26. Nor is there any external resemblance to the Maya Ix, figure 2, nos. 27 and 28. And yet it contains in a curious way two elements of the Ix grapheme. The really essential element of the grapheme is the three dots, and the Tepoztlan figure displays very prominently three large dots on the left and three smaller dots on the right. Distinctive of the codex form of Ix are the two converging dotted lines, and the Tepoztlan sign bears a shield-shaped figure on which are two similarly placed lines.

Sign no. 2 bears no resemblance to the Maya Men (fig. 2, no. 30) nor to the ordinary form of the Aztec Quauhtli, an eagle's head. But Seler[7] pictures a form of Quauhtli (fig. 2, no. 29) in which the eagle wears a headdress that compares interestingly in its main features with the Tepoztlan figure. This brings us to sign no. 1, or Cib, which we have already discussed. There is a sign beyond this which I have not shown, as it is worn and hard to make out, and I did not secure a good drawing. It shows no likeness to the unmistakable Aztec Olin or to the Maya Caban.

What does the band show to the right of sign no. 11, or Cimi? A blank space where the stone has been broken away. Beyond this space appears one more figure, no. 12. Of course we do not know whether any signs were inscribed in this space, or if so how many, though I should say the space would contain only two. Allowing two signs for the space would make no.

[7] Caractère des Inscriptions Aztèques et Mayas.

12 become no. 14, the position of the Aztec Calli or the Maya Akbal, neither of which has any resemblance to it. It is a conventionalized serpent jaw, a common Middle American art motive. Therefore I think that no signs need be allotted to the broken space and that we have here the day sign before Cimi-Miquiztli, which is the Maya Chicchan (fig. 2, no. 3 and 4), the Aztec Coatl (Serpent) (fig. 2, nos. 1 and 2). The common Aztec form is not conventionalized to the degree of this figure.

It is perhaps these figures to which Novelo refers in his words:

——hay otros jeroglíficos cuya interpretacion no ha sido posible de hacer, alguno de los cuales tienen cierta semejanza con los mayas.

Moreover he refers to the Maya influence in these terms:

——parece existir en los relieves de origen tlahuica (Tepoztlan y Xochicalco) cierta influencia maya cuya cultura floreció en Mexico, como se sabe, en los primeros siglos de la Era Cristiana.

He also tells us that pilgrims from far-away Chiapas and Guatemala, regions once of Maya culture, were accustomed to visit the sanctuary of Tepoztlan.

Yet it is certainly unexpected to encounter here, not far from Mexico City, definite day signs denoted by graphemes which, like Cib and Manik, were being carved on the structures of the old Maya Empire in distant Central America a millennium and more before the date of the Aztec temple on which they appear interchangeably with ordinary Aztec forms. And why was the sign series recorded backwards? Here again the only comparable thing that I can think of is a Maya one, the fact that the Maya inscriptions record a number series in reverse order when it is counting back into the past; that is, when its total is to be subtracted from, and not added to, a beginning date, in order to reach a second date. Does this Tepoztlan inscription seek to show the tonalamatl receding into the past?

We have here for the first time evidence of a definite, clearly demonstrable rapport between Nahuatl hieroglyphs and early Maya ones. The whole subject of the relation of Mexican and Maya graphemes, as it reveals itself in other places, is something of which I hope to treat extensively and from a linguistic viewpoint at another time.

WETHERSFIELD, CONNECTICUT

ANCIENT WHEAT AND BARLEY FROM KISH, MESOPOTAMIA

By HENRY FIELD

IN VIEW of the interest in the more or less recent discovery of several samples of grain from the excavations at Kish, it seemed desirable to place on record the conclusions of various botanical experts on these specimens. The date of the jars in which the grains were found was accurately determined by inscriptions, tomb-groups, pottery, and other objects which were found in the same stratigraphical level. These grains are therefore the oldest examples of cultivated cereals in Mesopotamia.

The site of the ancient city of Kish is located sixty-five miles south of Baghdad and about eight miles east of Babylon. In Sumerian times Kish was divided by the river Euphrates into an eastern and western metropolis. From the epigraphical records, it was the "first city founded after the Flood." In this connection it is interesting to note that Mr. L. C. Watelin, field director, discovered evidence of two local floods which swept over the eastern portion of the city about 3200 B.C. and 4000 B.C., respectively. The former may well be the traces of the Biblical deluge.

The alluvial plain upon which Kish was built is even today extremely fertile when water is available. There are several large canals which bring water from the river Euphrates and by the most primitive methods of irrigation—neither the noria or Persian water-wheel, nor the sakieh is used—the soil is intensely cultivated. The crops are not heavy, which is to be expected after six thousand years of almost continual cultivation where the principle of rotation of crops is unknown and the nitrogen content of the soil never replaced.

During the spring of 1928 the writer observed a peculiar scarecrow in the middle of a large cultivated area near Kish. This consisted of the vertebrae of a camel piled on top of each other and held in place by a stick on which each vertebrae was threaded. The local Arabs insisted that not only was this an efficient method for keeping away birds, but that its magical properties increased the quality and quantity of the crop.

From an archaeological and anthropological point of view the Kish area is of considerable importance since the excavations conducted by the Field Museum-Oxford University Joint Expedition during the past eight seasons at Kish and Jemdet Nasr (eighteen miles northeast) have revealed not only the cultural attainments of the Sumerians (possibly preceded by a proto-Semitic neolithic phase), Babylonians, and Sassanians, but also the interesting fact that the physical characters of these Arabs have remained little changed during the past six thousand years. Thus the region with which we

are dealing is the oldest inhabited site from which our civilization has directly evolved.

In dealing with the various reports on the samples of wheat, barley, and spices collected by the writer during two seasons at Kish (1925–26 and 1927–28) it must be stated that these specimens were handed over to Field Museum Department of Botany and Mr. James B. McNair, Assistant Curator of Economic Botany, very kindly referred them to the various botanical experts hereafter quoted.

Wheat

Early in January 1926 Professor Stephen Langdon, director of the joint expedition, and professor of Assyriology in the University of Oxford, was conducting excavations at Jemdet Nasr, where magnificent examples of painted pottery (type Susa II) and pictographic tablets in linear script were found. The writer was also working at Jemdet Nasr on January 6, and, while clearing out a painted jar, discovered some seeds which were sent to Field Museum for identification. These seeds lay at the bottom of the jar, which had been much blackened by the fire that destroyed the city during the fourth millennium before the Christian era.

According to Professor Langdon, this seed is of particular value since it comes from the very early Sumerian period, *circa* 3500 B.C.

Professor John Percival, of Reading, an authority on the wheat plant, reported to Professor Langdon that the seed was that of "*Triticum turgidum*," Rivet or Cone wheat. Professor Langdon adds:

> Thus the statements of Herodotus, Strabo, Pliny and Berossus concerning the astonishing productivity of Babylonian wheat are confirmed. We have at last a discovery from the Sumerian period contemporary with pre-dynastic Egypt. A good many samples have been found in Egypt from the same period, but these are all, I am told, spelt-wheats and a less developed product than the "*Triticum turgidum*" which was found at Jemdet Nasr.
>
> The Sumerian word for wheat was "*she-gib-ba*," a word meaning "the dark grain," which corresponds admirably with the grain found by the Expedition. The Babylonian word "*Kibatu*" was borrowed from the Sumerian word, and is rendered "*Henṭatā*" on Aramic dockets, which is the Hebrew "*ḥiṭṭā*," "wheat." There is no longer any doubt concerning the great antiquity of this species of wheat in Mesopotamia, although the word for Emmer (*Triticum dicoccum*) occurs even more frequently than the word for wheat on the pictographic tablets. Professor Percival, who has also examined most of the cereals found by Sir Flinders Petrie in Egypt, says that the Jemdet Nasr wheat is the first really ancient sample of "*Triticum turgidum*" which he has seen. The discovery confirms the theory, long accepted by historical botanists, that Mesopotamia is the original home of the bread-making wheats.

Professor Langdon stated further:

The Botanical Department of the Field Museum has determined this wheat to be "*Triticum vulgare*" or common wheat, called club wheat or "*Triticum compactum*," and with this analysis O. F. Phillips of the United States Bureau of Agricultural Economics agrees. Dr. O. Stapf, editor of the Botanical Magazine, Kew Gardens, sent me the same independent statement. He informed me that this wheat is "*Triticum compactum*" or club wheat, which is the only good bread-making wheat, and the most developed of all species of the wheat plant. Sir John Russell of the Rothamstead Experimental station, is non-committal between these two views, but I infer that he favors the view of Dr. Stapf and the botanists of the United States. If this be true then the most ancient Sumerians had succeeded in growing the finest kind of bread-making wheat and were far in advance of the agriculturists of pre-dynastic Egypt. If we may depend upon the Aramaic translation of the Babylonian word, referred to in my previous letter, this should determine the kind of wheat grown by the ancient Hebrews also.

In support of his determination of the wheat as *Triticum turgidum*, Sir John Percival states in a letter to the London Times:

I was not surprised to see my letter of February 3 from Professor Langdon regarding my identification of the very interesting wheat which he discovered in Mesopotamia; I also was prepared to find that some botanists, and others not botanists, consider the grains to be those of Bread wheat (*Triticum vulgare*) or Club wheat (*Triticum compactum*). The only surprise is that no one has ventured to name it Emmer (*Triticum dicoccum*). The grains submitted to me are exactly matched in form and size by several varieties of *Triticum turgidum* which are grown annually at the Agricultural Botanic garden at the University here (Reading, Berks, England), and I must respectfully beg to disagree with those who have named them *Triticum vulgare* . . . . Controversies of the identification of these highly complex cereals should be left to those who give special attention to them, and not until this is done shall we make any real progress in the elucidation of their evolutionary history and indirectly assist the anthropologist and archaeologist in the problems of the origin and movements of the earliest civilizations.

O. F. Phillips in support of his decision as to the classification of the specimens says:

The botanist or agronomist is governed largely by the plant itself, that is, plant habit, roots, stalk, stem, leaves, flowers, awns, etc., of course giving consideration to the ripened seed. When the seed is alone, having been separated from the plant, many agronomists of my acquaintance are frank to confess that identification then becomes to them more difficult.

In my twenty-five years experience in inspecting and handling commercial grains and particularly during the past ten years as chairman of the Board of Review of the Grain Division, Bureau of Agricultural Economics, United States Depart-

ment of Agriculture, which Board is charged with the interpretation of the United States standards for grain, and in that capacity, annually reviews from 40,000 to 60,000 samples of grain from all over the United States, I have not only made a careful study of the kernel characteristics of all known varieties of wheat grown in the United States, but of the principal varieties and classes grown all over the world. My collection of the world wheats, I believe, is one of the largest in the country.

In the above capacity I have been consulted at times by agronomists of our various agricultural colleges relative to classification of our different wheats. In view of the above, however, I am quite ready to yield from my personal opinion when a kernel can be grown and the botanist or agronomist prove the facts or classification from the growing plant. Unfortunately in this particular case that cannot be done.

You will recall that upon my first examination of Professor Langdon's wheat I expressed the opinion that it was a "club" wheat (*Triticum compactum*), but in referring to it in an article which was published in our Department letter, February 4 (1927)—a copy of which I gave you—I stated that it resembled either our "club" (*Triticum compactum*) or "Pollard" (*Triticum turgidum*) wheat, which would seem to indicate a doubt in my mind between the two classifications. It would be a very wise man, indeed, who could state definitely, after 5500 years and in their present condition, the true classifications of these kernels. It will be noted in many of these kernels that the crease is very narrow, tight and slightly crooked, and that the brush ends show a cheek smaller in size than the other, all of which are more characteristic of "*Triticum compactum*" than of "*Triticum turgidum*." True, the kernels have a dorsal hump, but this is also characteristic of "*Triticum compactum*."

In comparing these kernels with samples of Rivet wheat grown in England and submitted to me by Dr. John Engledow of Cambridge, England, it is noted that Rivet wheat, and other varieties of Pollard wheats for that matter, have a more open straight crease, some of them pitted, the cheeks are more even and uniform and the kernels more uniform in size. The fact that Dr. Franz Unger, Austrian botanist and scientist, who, as a result of his research work in Egypt, claims that the early wheats grown there were "Pollard" wheats and that they were known to ancient Egyptians, being figured on their monuments and found in graves of great antiquity, would seem to give credence to Dr. Percival's claim, but these kernels come from another country of equal or greater antiquity with no definite knowledge of intercourse between the two countries at that time.

While I appreciate the significance of a statement emanating from such authority as Dr. Percival, a further examination of these kernels convinces me that my original opinion is more nearly correct, that they are of the "*Triticum compactum*" family; it seems that Dr. Stapf is also of this opinion. . . .

I am sure you will pardon the personal reference to my past experience in this letter, as it is given at your request to establish my qualifications in passing on this wheat.

A photograph of some of these grains may be found on plate 12 in Field Museum Annual Report for 1926.

BARLEY

During the season 1927–28, Mr. Watelin continued excavations down to water-level below monument "Z." One meter below the "red-earth stratum" and three meters northeast of the "witness," or portion of monument "Z" temporarily left standing by Mr. Watelin, the writer found two small unpainted jars containing seeds. These grains were sent to Field Museum for study, and have been identified as barley.

The two samples and a third from Jemdet Nasr were sent for identification to the Bureau of Agricultural Economics of the United States Department of Agriculture in Chicago. The report, dated November 6, 1929, reads as follows:

> Reference is made to the three samples of ancient grain which we examined in the laboratory the other day. For purposes of identification, the samples were contained in three small bottles, (a) and (b) from Kish, and (c) from Jemdet Nasr.
>
> While time and the elements have charred and blackened the kernels to the extent that positive identification is rather difficult, we are of the opinion that each of the samples is of some form or type of barley. We are influenced in arriving at this conclusion by the appearance and shape of the crease (slightly twisted in some kernels), flattened backs, boat-shape of kernels, and germ shape, all of which are more or less common to our modern barleys.
>
> Time, abrasion, and possibly method of threshing, all have had a part in accounting for the apparent absence of the outer husk or hull of the kernels.
>
> The grain in bottle (a) from Kish is apparently a different type than that in the other two bottles, as the kernels as a whole are much smaller. The barley characteristics are much more pronounced in bottle (b) sample.
>
> There can be but little doubt, however, that each of the three samples is of some species of barley.

Samples of these seeds were also sent to Mr. H. V. Harlan, Principal Agronomist in Charge of Barley Investigation in the United States Department of Agriculture in Washington. Mr. Harlem reported on November 8, 1929 as follows:

> I am able to make only a partial determination of the barley in the samples which you recently forwarded. All three samples contained seeds of 6-rowed hulled barleys. This does not preclude the possibility of there being hull-less or 2-rowed sorts present. I could, however, find no kernels which could be identified as either. The grain seems to be slightly smaller than that coming from Egyptian excavations, and I think it is safe to say that it represents different varieties.

These grains of barley are figured in Plate VI of Field Museum Annual Report for 1929, and on page 54 is the following account by Dr. Berthold Laufer, Curator of Anthropology at Field Museum:

An interesting discovery was made this year in tracing three lots of barley in some of the pottery jars excavated from the low strata of the ruins of the ancient city of Kish. Botanical investigation disclosed the fact that this barley is of the six-rowed variety, and this, as far as is known here, is the first actually brought to light in Mesopotamia. Barley seeds of the four-rowed variety were formerly discovered at Nippur. The six-rowed type is the characteristic prehistoric barley which was known to the Indo-European nations, numerous examples of which have been found in the Swiss Lake dwellings. It is this species which was taken along by the Anglo-Saxons on their migration from their original home to the British Isles and then cultivated by them in England. In view of the discovery of the six-rowed barley at Kish the conclusion is now warranted that this cereal, so important in the development of agriculture, was first brought into cultivation at a prehistoric date in Mesopotamia where the wild species also occurs, and that the cultivated species was diffused from that center to all other countries of the Near East, Egypt, and Europe.

Other Seeds

During March 1928, while Mr. Watelin was conducting excavations at Jemdet Nasr, the writer found an unpainted jar which contained seeds, which were sent to Field Museum for identification. The seeds were also dispatched to Mr. H. V. Harlan, who reported on February 7, 1930 as follows:

I have received the sample of seed which you sent late in January. I have been unable to determine or to have the seeds determined with certainty. Both Mr. Brown and I feel that the major number of seeds included in the sample are from some umbelliferous plant and were probably used for seasoning. A smaller number of seeds are very similar to those of certain species of *Panicum*. I am unable to guess what this may mean, unless it is a case of misbranding. Possibly some condiment vendor at Jemdet Nasr was adulterating his spices. I hardly expect you to take this hypothesis seriously.

In a communication dated January 21, 1930, from Mr. O. F. Phillips, who is chairman of the Board of Review and Federal Grain Supervisor to the Bureau of Agricultural Economics of the United States Department of Agriculture in Chicago, he says:

Reference is made to your small bottle sample of grain taken from the ruins of Jemdet Nasr, near Kish, in March 1928, and which you recently submitted to us for identification.

This is without doubt the most difficult sample which you have submitted for identification from that period, due to the smallness of the kernels and their badly charred condition. In my examination of them under the microscope I am convinced that most of the kernels are some species of barley, although there appears to be some other seed present which I am unable to identify.

It would seem to me very plausible to suggest that the small room lying toward the northeast end of Jemdet Nasr was used by a grain merchant, since barley was found in one large jar and spices or their equivalent in a second jar. In the market (*suk*) at Hillah or any town in Iraq today, the grain merchants sell many varieties of seeds, the only difference being that the containers used are sacks instead of pottery vessels. Furthermore, this small room was found within fifty feet of the large bakery kilns standing in the largest room discovered at Jemdet Nasr.

These discoveries throw an interesting light on the early domestication of wheat and barley in the Kish area and proof is thereby established of the cultivation of cereals in Mesopotamia as far back as the beginning of the fourth millennium before the Christian era.

In conclusion I should like to thank the various experts who have contributed their valuable opinions to this paper.

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO, ILLINOIS

AN EXPLANATION OF A TRICK PERFORMED BY INDIAN JUGGLERS

By FRANCES DENSMORE

TWO classes of men treat the sick among Algonquian tribes,—doctors who administer herbs; and men who use magic and are commonly called jugglers. The former may be called a physical, and the latter a mental means of healing. That the two overlap in some cases is apart from our present consideration.

He who treats the sick by magic is in alliance with spirits and one phase of his work is the mysterious shaking of a little tipi constructed for the purpose. The juggler is tied with stout cords when placed in his little tipi and his first act is to free himself from this restraint, then he sings, pounds his drum and summons the spirits who are his advisors. The spirits make known their presence by a violent shaking of the tipi and by certain sounds which become familiar to those attending the performances but are understood only by the juggler. A spirit frequently summoned is the Great Turtle, said to make a whinnying sound. Hearing this sound, the people sitting qutside the tipi may say, "We want the turtle to dance," and from within the tipi comes a sound like blunt sticks pounding on the ground. Then they say to one another, "The Great Turtle is dancing." The sounds seem to vary little through the years, as Parkman, in describing one of these séances, states that

> A low, feeble sound, like the whine of a young puppy, was next heard . . . upon which the warriors . . . hailed it as the voice of the Great Turtle—the spirit who never lied.[1]

A Menomini informant said he had heard that the juggler produced these sounds by means of a small whistle but other Menomini, less independent in opinion, repudiated the idea. Certain songs are sung by the juggler as the spirits arrive and depart. The friends of the sick person, seated outside the tipi, hear the performance, and after the spirits have gone away the juggler emerges to announce the result of the conference. Perhaps the sick person has failed to fulfil the obligations of a dream, perhaps someone has "bewitched" him, or perhaps he is suffering from some peculiar ailment for which the spirits have prescribed a remedy. Such performances were also held to determine the location of lost articles, animals, or persons.

A juggler's performance was usually held at night, was expensive and impressive, and held a controlling hand over the Indians for many genera-

[1] Francis Parkman, The Conspiracy of Pontiac and the Indian War after the Conquest of Canada, 2: 165–166 (Boston), 1908.

tions. Only a few men remain who can perform this trick and, with the progress of enlightenment, the Indians have ceased to desire it, though it remains in a few isolated corners of the Indian country, especially on the north shore of Lake Superior. Members of the white race living near these Indians occasionally attend the séances and say that they hear, in the tipi, the voices of friends living at a distance, or long dead, and that many animals of the forest come at the call of the juggler. This performance among the Chippewa is described by Hoffman, who states that it was encountered by the Jesuit Fathers early in the seventeenth century and formed one of their greatest obstacles in Christianizing the Indians.[2] Hoffman also describes it among the Menomini and quotes a description of a séance witnessed by the Reverend Peter Jones.[3] The tipi figured by Hoffman is similar to a dwelling in construction, but much smaller and not so peaked at the top. The trick is mentioned by many early writers on the Indians but, so far as known, it has not been explained from the mechanical standpoint.

In July, 1930, the writer saw this trick at Grand Portage, Minnesota, an isolated Chippewa village on the north shore of Lake Superior, near the Canadian boundary. Although on friendly terms with the medicine-man, she was not invited to the séance and witnessed it by accident. The medicine-man was Sun-climbing-the-sky, whose magic power is held in high esteem by the Indians. He lives about 200 miles away but often comes to Grand Portage, and in the previous winter, according to report, he "made bad medicine" so effectively that it became necessary to send for another medicine-man to "straighten things out" and counteract his influence.

In the dusk of early evening the writer, accompanied by her sister, while crossing a meadow, was attracted by a strange sight in a grove of trees, about 300 feet away. A tall, slender tipi was swaying back and forth, though the air was still. Faintly came the sound of an Indian drum. Adjacent to the grove was a house where the juggler was visiting and had been seen, with his drum, less than half an hour before. No tipi was seen at that time, though the frame had probably been erected preparatory to putting on the cover. The situation was recognized at once as the famous shaking of a tipi. Standing still in the meadow, the writer and her sister watched the tipi sway with the regularity of a pendulum, back and forth, back and forth, moving exactly the same distance in each direction and stopping abruptly at each end of the arc. After continuing this for a few moments it stood motionless, a slender white figure in the shadow of the trees. Then it was

[2] Walter James Hoffman, The Midewiwin or "Grand Medicine Society" of the Ojibwa, BAE-R 7:251–252, 1891.

[3] W. J. Hoffman, The Menomini Indians, BAE-R 14: 146–149, 1893.

shaken violently, seeming to be attacked by a convulsion. The covering at the top of the tipi streamed outward as though the structure might be blown to pieces. Then it stood still. A few Indians were moving quietly about, near the house and tipi. All around was the calm of early evening, and one felt that the strange behavior of the tipi must have been a matter of imagination. Suddenly the tipi began to move again, the top swaying back and forth, back and forth.

We moved to a place somewhat nearer, where our car was parked. The Indians were accustomed to seeing us with the car in this place, so our presence did not attract attention. There we listened and watched for a long time. The singing and drumming could be clearly heard, the songs resembling those of the Midewiwin (Grand Medicine) and the drum beats being rapid and evenly accented. The behavior of the tipi was the same that had been seen from the meadow. The only persons who passed by were a man and his little daughter, and we greeted them in the usual manner. They went on their way toward the grove and the vibrating tipi. The man had been ill for several weeks, and his illness was known to be a cause of anxiety.

A day or two afterward a doctor and nurse came from a town fifty miles away and visited the man, diagnosing his ailment as (apparently) typhoid fever and directing that he stay in bed. The same day a dance was held by the medicine-man at the sick man's house. A large number of Indians attended, the medicine-man sang, the people danced in a lodge like that of the Midewiwin, and the sick man's wife cooked food for the feast, using a huge kettle suspended over a fire. All this took place a few feet from the house where the sick man, obeying the doctor's orders, remained in his bed. The writer was invited to this dance and attended it, but did not mingle with the dancers. Many Indians, of all ages, were present. The singing and drumming, like that at the tipi-shaking, resembled the custom of the Midewiwin. This dance was designated by an Indian as a "beneficial dance." It may be added that about two weeks later the writer talked about the tipi-shaking with the medicine-man who said he had summoned the spirits to ask whether his treatment of the sick man would be a success. He said that if the spirits "spoke loud and clear" he knew that his treatment would be successful but "if their voices were weak the man would surely die." In reply to an inquiry he said the man was getting well. No other inquiry was made as to the man's condition, but there did not seem to be any further anxiety about him.

The day after the shaking of the tipi an opportunity occurred for inspecting the paraphernalia. The writer had an errand at the house where the medicine-man was visiting and asked permission to see the place where

the tipi stood. Consent was readily granted on condition that no photographs be taken. The poles of the tipi were eight in number and were laid on the ground beside the folded cover of dingy white cloth or canvas, while against a tree were leaning numerous hoops to which a large number of stout cords were attached. These were near the circle of holes in which the tipi poles had been planted, within this circle being pine branches which had been pressed down by the juggler's body. This circle appeared to be about 30 inches in diameter,—possibly three feet across. In the few moments at her disposal the writer observed chiefly the holes in which the tipi poles had stood. The edges of these holes were as clean as though pegs had been put in clay. The blades of grass around the edges were not disturbed nor the earth crumbled. A little stick was put down one of the holes and when measured was found to be more than a foot long. Courtesy did not permit a more detailed examination of the equipment.

Various items and comments drift toward a student who remains a considerable time in an Indian village, and it was learned that the juggler had used the equipment belonging to his host, who was himself a juggler and had given these demonstrations in the attic of a house, setting up his tipi there and shaking it in the approved manner. Two questions arose: If the frame of the tipi was shaken as violently as it appeared to be, why were the edges of the holes not disturbed? And how could such a structure be erected on a board floor?

As a possible explanation of this trick the writer suggests that the lower hoops may hold the poles in place after the manner of barrel hoops, and that the upper hoops may be larger than the circle of poles and manipulated by cords attached to the body of the juggler. These could be attached in such a manner that he could jerk them to one side or the other and continue to pound his drum. Although no measurements were taken, it appeared that some of the hoops were slightly larger than the circle of holes in the ground and it is always stated that the hoops were outside the poles. If the tipi cover were of proper texture and firmly fastened around the base of the framework, a jerking of the upper hoops would produce a violent agitation. The upper hoops could be attached to the poles by cords permitting them to hang loosely but not fall, while cords hanging down from the hoops could be attached to the juggler's body. The Indians stress the framework of poles, saying that such frames have been found in the woods and the poles were set so solidly that they could not be shaken. By the foregoing explanation there would be no need of shaking the poles as the agitation would be produced by the motion of the hoops beneath the cloth cover. For such a demonstration it would be important that the poles be solidly set, to with-

stand the jerking of the hoops against them. Great secrecy attended the erection of the tipi and, as stated, the demonstration seldom took place in the daytime.

Whatever may be the mechanical explanation of the tipi shaking, its greatest interest lies in the influence it exerted on the minds of the Indians, an influence affecting every phase of their lives.

RED WING, MINNESOTA

A UNIQUE PUEBLO II BIRD FETISH

By KATHARINE BARTLETT

BIRDS have always played an important part in the lives of the Pueblo peoples from the earliest times. Some species were used for food and some were valued because of their feathers. In the story of ceramic development alone, one can read what a prominent place birds had in the minds of the Pueblo, for bird-shaped vessels and bird designs are to be found from Basket Maker III to modern Pueblo times in nearly every Southwestern ceramic area. Also small bird fetishes carved from stone and shell have been found in ruins of Pueblo III date or later, but the fetish here described antedates these and is otherwise a unique specimen.

In the summer of 1930 when the field expedition of the Museum of Northern Arizona was excavating small early Pueblo II sites north of the San Francisco peaks, the excavation of a small masonry granary was undertaken. When the rocks from the fallen walls had been removed, the appearance of the interior indicated that the place had been destroyed by fire. Indeed, the posts that supported the roof were so completely burned out that no wood material was left by which the granary can be dated. One small object remained undestroyed by the fire, for, on the floor, a small bird fetish of wood was found, entirely charred but fully preserved. (See fig. 1.)

FIG. 1. Two views of wood fetish from north of the San Francisco Peaks, Arizona. Pueblo II. Scale: 5/6.

On first sight the fetish looked like a beetle of rather Brobdingnagian proportions, perhaps because it was black, but, upon comparison with all known species of beetles of this region, it was found not to resemble any of them in the least.

The little fetish was made from a piece of wood, which may have been procured from a yellow pine splintered by lightning, as so many trees in

the region are today. The wood was carefully carved, probably with an obsidian knife, and delicately polished with a bit of fine-grained sandstone, for this was a work of art, deserving the greatest care. It measures 66 mm. in length from head to tail; 23 mm. in breadth at the shoulders, the widest portion, and 19 mm. at the head; the maximum thickness at about the center of the body is 12 mm.

Looking at the bird from above, one sees a somewhat triangular-shaped head in which there is a slit carved for a mouth, and two round depressions for eyes, in which bits of bright stone may have originally been set. Such stone was probably not turquoise, as none was found in the granary or other sites of the same period. The neck is clearly indicated by a groove. The body gradually tapers in width from the shoulders to the rounded tail. The wings are represented as folded closely against the body, with a groove down the center dividing them.

FIG. 2. Two views of inlaid hematite fetish from Pueblo Bonito. Pueblo III. Scale: ca. 5/6. (After Pepper, fig. 50.)

Seen in profile, the head, body, and tail are clearly distinguished from each other, with the eye and mouth showing. The wings stand out in relief from the tail, which is about half the thickness of the body. The under side of the fetish is flat and from the mouth to the tip of the tail forms a beautiful even curve. One hole of the perforation on the under side is visible below the head.

On the under side the fetish is without relief, and is very carefully polished. Below the head close to the neck, two small holes have been bored down on the diagonal, meeting at the center, so that the bird could be suspended. If hung from a cord around a person's neck, the fetish hangs tail downward, perfectly balanced.

As far as I have been able to discover, only two similar fetishes are known. In his excavations at Pueblo Bonito, Chaco canyon, New Mexico, George H. Pepper discovered one of much the same aspect.[1] (See fig. 2.) To quote from his report:

In clearing away the débris in front of the human remains, a bird form of hematite was found. . . . It measures 58 mm. from tip of bill to tail, 27 mm. in width at the middle section of the wings, and 16 mm. in thickness at the thickest part which is directly back of the neck portion. The back is divided into two parts by bands of turquoise which have been sunk to the level of the surface. They start from either side of the neck, extend across the back and end at either side of the tail. These divisions serve to accentuate the wings which are over 1 mm. higher than the general surface. In each wing deep grooves have been cut and into these turquoise pieces have been inlaid. The turquoise lines extend to within 5 mm. of the edge and from this point a piece of shell extends to the edge. The tail is 15 mm. broad and a piece of shell 5 mm. wide has been attached to the end, the hematite having been cut away so that the shell would rest on the level of the stone. On the extreme edge of the shell, three turquoise pieces were inlaid. . . . The head had been carefully rounded and the front part pointed to form the beak. A groove encircles the neck and in this a series of turquoise sets have been inlaid. The eyes are 3 mm. in diameter and are made of half round pieces of turquoise which have been glued into holes drilled for the purpose. The under part is plain with the exception of two holes that have been drilled through the breast. The manner of drilling these holes and a peculiar concavity between them is shown in the drawing. The figure evidently represents a water bird at rest on the surface of a pond or stream. The wings are folded over the back and the head is thrown forward as though the bird were swimming.

From the position of the holes drilled in the breast, it would seem that this object has been suspended in some way and may have been used as a neck ornament in certain ceremonies.

The second similar bird fetish is a modern type used by the present day Zuñi. (See fig. 3.) Frank H. Cushing in his study of Zuñi fetishes[2] represents the various fetishes of the Eagle, God of the Upper Regions, and his various younger brothers of the other regions. He writes:

They are characterized merely by rude bird forms with wings either naturally or conventionally carved. Further details are rarely attempted, from the fact that all the other principal prey animals are quadrupeds, and the simple suggestion of the bird form is sufficient to identify the eagle among them. . . .

Plate VIII, Fig. 3, represents the fetish of the red Eagle of the southern skies. This is doubtless a nearly natural fragment of very fine grained red sandstone, the wings being indicated by deep lines which cross over the back, and the rump grooved

[1] George H. Pepper, Pueblo Bonito, AMNH-AP 27: 134, and fig. 50, 1920.

[2] Frank H. Cushing, Zuñi Fetiches, BAE-R 2: 29, and pl. 8, 1883.

to receive the cord with which to secure to the back an arrow point. The breast is perforated.

It is apparent that there are very striking similarities between these fetishes. They all represent a flattened bird form with the heads, necks, wings, and tails indicated in the same way and with a perforation on the under side for suspension. Comparing the three, we see that the heads of the Arizona and Zuñi specimens are rather crude and of similar shape, the one from Chaco canyon having a more pointed head. The Arizona and Chaco birds both have the eyes indicated, while the former is the only one showing a mouth. Each of the three has a distinct neck marked by a groove. The shape of the body of the Arizona specimen and of the one from Zuñi is rather long and slender, while that of the Bonito one is shorter and broader, perhaps because of the more ornamented wings. The wing shapes

FIG. 3. Red sandstone fetish from Zuñi. Pueblo V. (After Cushing, pl. 8, fig. 3.)

vary slightly, being indicated by a straight groove in the northern Arizona specimen, by two curved lines in the Zuñi, and by two crossing turquoise bands in the Bonito. The first and the third have short rounded tails, while that of the second, though short, is square on the end. The difference in material is natural, for the Arizona bird comes from a heavily timbered region, and was made in Pueblo II times before turquoise was traded into this region. Perhaps what is now a little charred black bird may once have been painted the red color of the other two fetishes. The one from Pueblo Bonito is of hematite (red) inlaid with shell and turquoise, and from its association belonged to the Classical Pueblo period (Pueblo III) which reached its climax at Chaco canyon. The modern Zuñi specimen is of red sandstone, with no embellishments or details, simply suggesting the bird form, as Cushing says.

In spite of these minor differences, the three fetishes are of the same type—a type that has evidently persisted for over a thousand years of Pueblo history. It was present in early Pueblo II, as we know from the carved wood specimen found in a Pueblo II granary at the foot of the San Francisco peaks; it appeared in a more decorative form at Pueblo Bonito

(910–1130 A.D.—beam dates[3]) in Pueblo III; and some seven centuries later, in 1879–80 when Cushing was studying at Zuñi, he found the same type of fetish, representing one of the important Prey gods of the Hunt, playing an important rôle in the religious life of the people.

MUSEUM OF NORTHERN ARIZONA
FLAGSTAFF, ARIZONA

[3] A. E. Douglass, The Secret of the Southwest Solved by Talkative Tree Rings, National Geographic Magazine, p. 743 ff., December, 1929.

IMPORTANCE OF ETHNOBOTANICAL INVESTIGATION

By MELVIN R. GILMORE

THERE is one division of ethnological investigation which has ever been sadly neglected. I refer to ethnobotanical inquiry and collection. It is strange indeed this neglect should have occurred, for the relation of a people, expecially of a primitive people, to their floral environment is obviously fundamental to all their culture. This consideration is of the utmost importance for a clear understanding and a fair appraisal of economic conditions and of traits of material culture.

A primitive people lived well or ill according to the wealth or paucity of useful species of plants at their disposal. Primitive tribes, such as our Indians, depended immediately upon their floral environment first of all for food; not only for their vegetal food, which was a very considerable part of their fare, but also ultimately for such animal food as they had, for the animal life in any region depends, in both quantity and quality, upon the plant life.

Under such conditions of intimate dependence upon the vegetation of their habitat a people would naturally be induced to become acquainted with all the plants which grew about them, and which held so large a practical interest in their lives.

The first and most urgent demand of man, as of every other living creature, is for food. Besides food, man requires shelter and clothing against the inclemencies of the weather. He needs also a considerable variety of materials from the plant kingdom for the manufacture of implements, utensils, and other conveniences useful in the acquisition, transportation, storage, and preparation of the materials required for these prime necessities.

After these have been met, man has always and everywhere sought the satisfaction of esthetic desires. He requires ornament in clothing and embellishment of furnishing in habitation, objects pleasing to the eye in symmetry of form and color; he wants pleasing odor in clothing and in his abode, hence seeks perfumes; rythmical and melodic sounds are desired to please the ear or to compose the mind in religious rituals, so musical instruments are made. And for illness or injury, medicaments and instruments are required.

For the satisfaction of all these demands every tribe made a thorough exploration of the vegetal resources of their region and also imported from surprising distances useful vegetal products not indigenous in their own domain.

Interpretation of Culture Traits

The study of ethnobotany is of great importance for the aid it gives to a proper understanding of the interrelations of all the several traits and of the whole material and intellectual culture of a people in its entirety. Without the light afforded by ethnobotany an investigator may easily go far astray in interpreting his observations. I am reminded of the interpretation given by a very eminent anthropologist to a common saying which he heard current among the people of a certain Indian tribe, viz., that wild flowers should not be plucked because they contain the souls of little children. He regarded this as the statement of a peculiar tribal belief in regard to human souls. But to me it immediately suggested the teaching among all the tribes of my acquaintance upon the sanctity of all life, and specifically as to conservation of plant life. They were taught by their elders that wanton destruction is wicked. A precept which they frequently heard was: "Do not needlessly destroy the flowers on the prairies or in the woods. If the flowers be plucked then there will be no flower children (seeds); and if there be no flower children, then in time there will be no people of the flower nation(plant species). And if the flower nations should thus die out of the world, then the earth would be sad. All the flower people, and all the different nations of living things have their own proper place in the world, and without them the world would be incomplete and imperfect."

I think it was similar teaching that was heard by the anthropologist mentioned; because he knew nothing of the intimate relation of the people to their floral environment nor of their habits of thought with reference to vegetation, and because he was himself quite unaccustomed to think about plants, he entirely misconstrued the meaning of the saying quoted.

Ethnobotanical study not only prevents misapprehension and misrepresentation of observed facts, but is positively necessary in many instances to the correct diagnosis and explanation of ethnological facts, of the symbolism of objects used, and the significance of allusions in the text embodied in ceremonial ritual. When it is recorded that at a certain stage of a ceremony "a wisp of grass" was used in a certain manner we have no clue to the significance of the act for the celebrants nor even any certainty that it was grass, much less what species. It may have been actually not a grass but a sedge, or some other plant even more remote from the grasses. We need to know exactly the species used, for in any such case it was strictly prescribed for the given ritual, and nothing else would do, the given species having its symbolic meaning in the mind of the people.

So we cannot grasp the esoteric meaning of a ceremony in which plants are employed, unless we know certainly the species and the reaction of the

tribesman's mind to that particular species. For the Indian each species has its own proper fuction in the constitution and working of the world, hence, for example, different species are used as incense in different ceremonies, each incense being burned for a particular purpose. Ethnobotanical study gives us an illuminating line of evidence upon the ethnic psychology and the rationale of tribal rites and religious ceremonies.

As a Measure of Culture

The relations of a people to the indigenous vegetation and that of other regions near or farther away aids in measuring their cultural status and their contacts with other peoples. Thus we may gain knowledge of their agriculture, if agriculture was practiced, and much of the pattern of their customs and habits of life. We may learn of ancient commerce and commercial routes. By the evidence of ethnobotany we may determine the centers of domestication and the lines of distribution of cultivated species. We may obtain suggestions for additional uses of plants besides those now employed by our own people; we may also learn of useful qualities of other species not now cultivated, which might profitably be domesticated and improved by selective breeding and cultivation.

Relation to Symbolism, Ceremonials, Philosophy, Linguistics, History

But it is not only the tribal economic botany, interesting and useful as it may be, which we should seek. A proper ethnobotanical study of any people would include much more than this. We should make inquiry not only into the Indian economic botany, uses of plant products for food, and food accessories; manufacture of cordage and textiles; tools, implements, and utensils; habitations, furnishings and fixtures; perfumes, dyestuffs, and other uses; but we should make inquiry into the whole range of knowledge of plants and plant life. So fundamental to the aboriginal life of every tribe were their relations to plants, so complete was the ramification of these relations, that a competent consideration of ethnobotanical facts is essential to any fair and adequate presentation of every phase of ethnographic study.

Only by the inclusion of an ethnobotanical study of a people can we form a full and fair representation of their material and mental culture. Such study is necessary for an understanding of much of their folklore, their phenologic observations and the dating of seasonal industrial activities, and of festive and religious occasions; ritualistic forms and symbolism, allusions in myths and legends, their geographic place names, and new words

in vocabularies of languages changing gradually during the long course of migration into new regions. An example of this last category is offered by the origin of the Dakota word ti^{a}psi^{a}na for the plant whose scientific name is *Psoralea esculenta*. This explanation of the etymology of the name ti^{a}-psi^{a}na was suggested by Dr. J. R. Walker, well known for his studies of the Dakota.

The Dakota name of wild rice (*Zizania aquatica*) is psi^{a}. The Dakota migrated from the region of the Great lakes, where wild rice abounds, into their present habitat in the high plains, where it is not found. But while they no longer had the highly prized psi^{a}, they here found a new and valuable food plant in the prairie region which in a large measure compensated for the loss of psi^{a}. This prairie plant, previously unknown to the Dakota, was *Psoralea esculenta*. The Dakota word for prairie is ti^{a}ta^{a}. It appears that a name was then formed for the newly discovered plant by composition of the term for prairie with the term for wild rice and the termination na, which is common as the ending of many plant names; thus we have ti^{a}(ta^{a}) + psi^{a} + na, ti^{a}psi^{a}na, as the name of this plant new to their experience. This name represented at once to their minds the habitat of the new plant in contrast to that of psi^{a}, and also its value in their economy in replacing that plant, so highly prized, but no longer available to them.

It might not be thought that the findings of ethnobotanical inquiry would be necessary or even useful to linguistic studies, but the foregoing and the following instance will show that they may well be so. The very earliest flower to appear in spring on all the northern prairies is the blossom of the Pasque Flower, *Pulsatilla hirsutissima* (Pursh) Britton. The name of this flower in the Dakota language is hokši-cekpa Wahca, which means "twin flower," hokši-cekpa being the word for twin, and wahca the word for flower. Why this flower should be called "twin flower" by the Dakota is not self-evident, but the explanation of the reason is an interesting fact in Dakota psychology and Dakota plant nomenclature as it is in Dakota linguistics. This flower is the first of all to bloom, appearing while the weather is still cold, and many times it is covered by the later snowfalls; but it comes through and shows its cheerful blossoms standing amid the snow. Because they are the first heralds of returning spring they are regarded with peculiar affection by all the people of the regions in which they abound, and their coming is eagerly expected. The Dakota liken the feeling which greets the appearance of these, the first-comers of spring flowers, to that feeling of fondness and glad expectancy which awaits the birth of the first-born child of a human family. So they call this first spring flower the "twin flower," linking it thus with the first-born child of a family.

The child and the flower are counted twins in the fond, yearning hope which awaits their coming.

Scope of Primitive Science

It is not Indian economic botany only which we should seek. Though very interesting and useful, it is after all only a part of the science of botany. We should properly explore the whole scope of a people's knowledge of the science. We should learn what their naturalists know about plant anatomy, of the plant as a living organism, of the organs of plants and their functions. We should obtain their views of plant taxonomy and their methods in nomenclature. We should learn what they know of the relation of plants to their environment, their power of adaptation, and of association of species. We should also find out what they know of the distribution and range of species. Among agriculturists we should inquire into their knowledge of plant breeding and seed stock selection, of amelioration and acclimatization.

Thus adequate exploration of the ethnobotany of a tribe is in itself no slight task. But however much or little of such information is obtained, it is all helpful to other lines of anthropological investigation. In every archaeological exploration the greatest care should be exercised to preserve every trace of vegetal remains, whether carbonized or in exsiccated condition. From such vegetal remains we may obtain important evidence in regard to the distribution of species in prehistoric time, and of their former uses and of degrees of advancement in technique. Also, in the case of cultivated plants, we should thus find the evidence of lines of distribution of crop species and of the stages of advancement in the improvement of such species. We might also learn much concerning routes of travel and commerce, and of the commodities exchanged.

Botanical Observation in Connection with Pursuit of Other Lines of Investigation

It is not to be desired that an investigator of other special ethnological topics should turn aside to make inquiry in regard to Indian botany like one who is botanically trained. But every field worker should be alert to the possibilities of tribal plant lore impinging upon his own special field on every side; to sense these correlations when they exist; to follow their lead and to take advantage of them to the enrichment of his own study. The most favorable arrangement would be that of cooperation of the workers in several lines of ethnological investigation, each profiting by the stimulus and extended horizon afforded by the views of each other. The point of view

and inquiries of the botanist would bring out additional facts and discover new implications of phenomena already observed, which otherwise would never appear.

METHODS

Every investigator who comes upon any reference to a plant or vegetal product should note it and have the species identified. He should not fail to record carefully the native name of the plant and should secure an identifiable sample for record. This specimen should be certainly identified by the Indian informant and later by a systematic botanist. For example, if the investigator is inquiring about basketry or matting or cordage he should obtain as a part of his record botanically identifiable specimens of the plants used in these manufactures. If dyes are used for decorative designs on these fabrics the sources of the dyes should be ascertained and specimens obtained of the plants furnishing the dyestuffs.

If an item is learned on the use of certain seeds for making beads, or on the use of perfumes for the hair or clothing, or symbolic objects used in religious ritual, then the identification of the plant from which these products are obtained should be made sure by securing specimens of the plants themselves.

The student should bear in mind that actual observation, fully and carefully recorded, accompanied by specimens indentified by the Indian informant, is worth more than any hearsay or second-hand information. Such data are of permanent and inestimable value in many and often unexpected ways.

The field worker not acquainted with botanical aims and technique will desire some instruction as to materials to be secured, and methods for their preservation, together with the items of information to be sought. In the first place he needs to know how herbarium specimens are prepared and preserved. The standard size of mounting sheets is 11½ by 16½ inches, so all dried specimens of plants should be within this size limit. If the specimen be larger it may be bent while still flexible, before it becomes stiff and fragile by drying. In the case of trees and shrubs, branches representative of the whole plant may be used.

An herbarium specimen should consist of all characteristic parts of a plant, not only those above ground, such as buds, leaves, flowers and fruits, but also underground parts, such as roots, rootstocks, and tubers, or other distinguishing parts. Usually a single specimen could not be made to show all these parts, but two or more specimens collected at different times might well be secured.

Preparation of Specimens for Herbarium

Each specimen should be laid out flat with leaves and flowers extended between sheets of absorbent paper, one above another on a board of other flat surface. There should be another board laid over all, and by a weight, by buckled straps or tied cords, pressure should be applied sufficient to prevent leaves or flowers from wrinkling in drying, but not so great as to crush any tender parts. For the sheets one may use blotting paper, carpet paper, or even old newspapers folded flat and smooth. The drying papers should be changed every day until the specimens are completely cured.

Specimens of Plant Products

Besides herbarium specimens for identification of the species it is desirable also to collect specimens showing Indian utilization of the plant. For this purpose samples of raw materials should be prepared, showing the stages of preparation through which they pass, and also specimens of the finished product. Various receptacles may be used, suited to the nature of the materials; they may be tough paper bags or boxes, muslin bags, glass jars and phials, and tin boxes or cans. Each specimen should be carefully and securely labeled, numbers corresponding to chronologic order in collecting. These numbers should be entered upon data sheets or in a notebook. With each number on the data sheets should be entered full information concerning the specimen which is marked with the corresponding number. The data sheets may be made in some such order as follows:

1. Number.
2. Blank space for insertion of botanical name when determined.
3. Blank for name of botanist who identified the specimen.
4. Common or popular English name of the plant.
5. Name in language of the tribe and etymological analysis of this name.
6. Tribal name of any product made from this plant.
7. Name of tribe from which the information was obtained.
8. Name of Indian informant.
9. Uses of the plant.
10. Parts used.
11. Place where information was obtained.
12. Date of collecting.
13. Name of collector.
14. Remarks.

Discrimination and Careful Sifting of Information

Under the head of "Remarks," very full and detailed description may be given, the fuller the better, and all these details should be entered at the time the observation is made or the information obtained, and never left

to memory for later entry. Moreover, the statements should be thoroughly verified at the time by review with the informant in all particulars.

If any plants not indigenous to North America are noted as used by Indians, it should be stated that their use has probably been learned from the white people. It is very confusing to the reader if plants introduced from Europe that have escaped and become naturalized in America are listed without discrimination among indigenous plants. Unqualified statements that such plants were used by Indians are quite misleading. In a proper ethnological study of any tribe we should learn distinctly what items were comprised in the aboriginal culture, and what were borrowed from other sources.

Distinction between Indigenous and Introduced Plants

I make particular mention of this point because of certain papers published under titles such as "The Ethnobotany of the . . . Indians." In these papers a considerable number of plants introduced from Europe have been listed as having Indian uses, with no intimation that they are not indigenous and so of course could not have been used by the Indians before the coming of the white men. In these lists are included burdock, catnep, coltsfoot, camomile, dandelion, ground ivy, lamb's-quarters, mullein, mustard, peppermint, shepherd's purse, velvet weed, wild parsnip, and other plants introduced from Europe and naturalized here, and the inference is left that they are native. Uses of these foreign plants by Indians are told just as aboriginal uses of indigenous plants are told, leaving the reader in ignorance of the mixture of European acculturation elements along with the elements of aboriginal culture. Such confusion is deplorable.

Etymology of Indian Plant Names

Careful record should be made of the etymological analysis of the names of plants and of botanical terminology in the language of the tribe studied. Reference has been made already to the importance of this rule. Such etymological evidence may disclose significant facts not otherwise discoverable.

It is hoped that this discussion may be in some degree helpful to all ethnological field workers. It is offered with the purpose of suggesting a means of acquiring a more ample and adequate body of information in the cultural study of any tribe, an additional aid toward a clearer and more definitive exposition of tribal culture; and further security against error and misinterpretation of observed actions and appearances.

University of Michigan
Ann Arbor, Michigan

REPORTS

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR THE YEAR ENDING DECEMBER, 1931

The American Anthropological Association held its thirtieth annual meeting at Phillips Academy, Andover, Massachusetts, on December 28–29, 1931, in conjunction with the American Folk-Lore Society.

COUNCIL MEETING, DEC. 28, 4:30 P.M.

President G. G. MacCurdy in the chair. The minutes of the Cleveland meeting, 1930, were not read, but were approved as printed in the American Anthropologist, vol. 33, no. 2.

REPORT OF SECRETARY

There has been no meeting of the Executive Committee during the year. Its business has been transacted by letter and wire.

The Pacific Section of the American Anthropological Association met with Section H of the American Association for the Advancement of Science at Pasadena and Los Angeles, California, June 15–20, 1931. Mr. M. R. Harrington was in charge of local arrangements. Meetings were held at the Southwest Museum.

The President appointed the following committees and representatives during the year:

Nominating Committee: Drs. E. A. Hooton (Chairman), F. G. Speck, M. W. Stirling.

Program Committee: Drs. E. Sapir (Chairman), F. W. Hodge, N. C. Nelson.

Representatives to the National Research Council:

Drs. E. Sapir and F. G. Speck, in place of the two ineligible representatives nominated at the 1930 annual meeting of the Association.

Mr. Neil M. Judd, to fill the unexpired term of Dr. G. A. Dorsey, deceased.

Delegate to the Second International Congress of Linguists, Geneva, August 25–29, 1931: Prof. Franz Boas.

The membership of the Association, as of December 1, 1931 is as follows:

Number of members			971
Honorary	1		
Life	11		
Regular	959		
Resigned during 1931		33	
Deceased " "		13	
Dropped " "		10	56
Admitted		82	

The Association has lost by death during the year thirteen members: Robert Burket, George A. Dorsey, Coleman du Pont, Charles J. Dunlap, Edwin Ertsgaard,

George M. Kober, Alfred P. Maudslay, Dwight W. Morrow, Max. L. Rosenberg, George W. Stewart, B. Tavera Acosta, Herman F. C. ten Kate, Karl von den Steinen.

The secretary attended the Seventh Annual Conference of the Secretaries of the Constituent Societies of the American Council of Learned Societies, in New York City, January 29, 1931.

Respectfully submitted,
JOHN M. COOPER,
Secretary

It was voted that the Secretary's report be accepted.

REPORT OF TREASURER

Regular Fund

Receipts

Balance on hand December 1, 1930 (exclusive of Index Fund)			$2,516.96
Membership dues			
American Ethnological Society		$ 646.50	
Anthropological Society of Washington		255.00	
Central States Branch		297.00	
American Anthropological Association			
1929	$ 12.00		
1930	170.90		
1931	3,554.42		
1932	182.60	3,919.92	5,118.42
Sale of publications	$ 729.21		
Reimbursements	239.88		
Interest	120.00		
Royalty Memoirs Fund	33.00		1,122.09
			$8,757.47

Disbursements

American Anthropologist:		
George Banta Publishing Company and Oakland National Engraving Company		
Printing	$2,971.69	
Illustrations	631.77	
Distribution	206.15	
Storage, insurance	68.50	
Reprints	392.81	$4,270.92
Editor's expenses		655.68

Treasurer's expenses			
Salary	$ 356.25		
Office	93.57		
Membership	74.10	523.92	
Secretary's expenses		99.57	
Out-of-print publications		181.31	$5,731.40
Cash on hand, November 30, 1931			3,026.07 $8,757.47

Resources

Cash on hand, November 30, 1931			$3,026.07
Due from sales: 1930	$ 161.20		
1931	11.80	$173.00	
Due from dues:			
1930			
American Anthropological Association	$ 12.00	12.00	
1931			
American Anthropological Association	$ 340.80		
American Ethnological Society	90.00		
Central States Branch	135.00	565.80	
Due from reimbursements		19.36	770.16
			$3,796.23

Liabilities

Membership dues for 1932–33 already paid	$ 197.60	
Net excess resources over liabilities	3,598.63	$3,796.23

PERMANENT FUND

Receipts

Balance, December 1, 1930		$3,035.93
Interest on Savings Account, Jan. 1, 1931	$ 59.92	
Interest on Liberty Bonds, April, 1931	6.36	
Interest on Savings Account, July 1, 1931	56.64	
Interest on Liberty Bonds, Oct., 1931	6.39	129.31
		$3,165.24

Investments

Liberty Bonds (three)	$ 291.09	
Cash in Savings Account	2,874.15	$3,165.24

INDEX FUND

Balance, December 1, 1930	$1,007.21	
Interest	40.14	$1,047.35

EXPENDITURES AGAINST 1931 BUDGET

	Allowance	*Spent**	*Balance*
Secretary's expenses	$ 100.00	$ 92.87	$ 7.13
Editor's expenses	720.00		
Editor's assistant		593.75	
Office expenses		61.93	
		655.68	64.32
Treasurer's expenses	680.00		
Treasurer's assistant		356.25	
Office expenses		95.57	
Membership expenses		74.10	
		523.92	156.08
Membership campaign (Archaeological Institute of America)	150.00		150.00
American Anthropologist	$4,424.42		
Balance due on No. 4 of 1930	104.42	104.42	
Printing	3,150.00	2,854.89	295.11
Illustrations	500.00	494.66	5.34
Reprints	400.00	309.12	90.88
Distribution	200.00	206.15	−6.15
Storage, insurance on back numbers	70.00	68.50	1.50
		4,037.74	386.68
Out of print publications	300.00		
Purchase	100.00	3.00	97.00
Photostat reproductions	200.00	178.31	21.69
		181.31	118.69
Totals	$6,374.42	$5,491.52	$ 882.90

* This column lists net expenditures (i.e., gross expenditures less reimbursements).

REGULAR RECURRENT INCOME AND EXPENDITURES

Income

	1928	1929	1930	1931
Memb. dues from affil. soc. at $5	$1,145.50	$1,166.00	$1,653.50	$1,198.50

Memb. dues collected directly at $6 (less subscr. commissions)	3,664.05	4,000.22	3,756.84	3,919.92
Total dues	4,809.55	5,166.22	5,410.34	5,118.42
Sales of publications	843.00	535.15	533.42	729.21
Interest and royalty	131.50	148.50	153.00	153.00
Total	$5,784.05	$5,849.87	$6,096.76	$6,000.63
Expenditures				
American Anthropologist, printing and illustrations:				
No. 4 of preceding year (part)			634.09	104.42
Nos. 1–3 of year	$2,378.34	$2,918.41	$2,904.11	
No. 4 of year, part		646.32	538.84	
No. 4 of year, whole	759.88			
No. 1 of next year	125.24		65.90	
Nos. 1–4 of year				3,349.55
Total	$3,263.46	$3,564.73	$4,142.84	$3,453.97
Anthropologist and Memoirs (distrib., storage, insur., net cost gratis reprints)	455.36	521.79	507.29	583.77
Memoirs: Print. and ill. paid by Assoc.	61.85		539.72	
Total account, publ.	3,780.67	4,086.52	5,189.95	4,037.74
Sec'y, Treas. and Ed's. offices	1,344.41	1,187.07	1,141.74	1,272.47
Reprinting and purch. out-of-print publications	92.27	79.90	118.28	181.31
Total	$5,217.35	$5,353.49	$6,459.97	$5,491.52
Surplus carried over	$ 566.70	$ 496.38		509.11
Deficit			$ 363.21	

During 1931 bank balances of the three funds of the Association increased as follows:

Regular fund from	$2516.96 to $3026.07
Permanent fund from	$2744.84 to $2874.15
Index fund from	$1007.21 to $1047.35

This makes a total of $6947.57, of which $6921.50 is in a savings account (Bank of America), drawing four per cent interest.

Upon consultation with Professor Kroeber it was deemed inadvisable to attempt the membership campaign among the members of the Archaeological Institute of America. The Treasurer's assistant, however, devoted 45 hours to a general member-

ship campaign. Two hundred and twenty-six form letters were mailed, which resulted in the addition of 19 new members.

In view of the Association's financial condition and in conformity with the recommendation in the appendix to the report of the auditing committee (published in American Anthropologist, 1931, page 459), it is urged that the 1932 budget appropriation should not exceed $6000.

Respectfully submitted,
E. W. GIFFORD,
Treasurer

It was voted that the Treasurer's report be accepted.

The President appointed the following Auditing Committee: Drs. A. L. Kroeber, and R. Olson.

It was voted that the four recommendations made in the report of the Auditing Committee for 1930 (American Anthropologist 1931, 33: 459) be binding on the Budget Committee in its recommendations and on the Treasurer. It was further voted that the Executive Committee of the American Anthropological Association serve as Budget Committee and that it report to the Association at the annual meeting, December 29, 1931.

REPORT OF EDITOR

The fourth issue of Volume 33 was distributed about two months before the close of the year. In consonance with the economy programme outlined by last year's Auditing Committee, the American Anthropologist for 1931 was limited to 670 pages as against 717 in 1930. As a result of this policy all printer's charges have been defrayed for the year, while in the two preceding years a residual indebtedness had to be reported. The Treasurer recently attempted to secure a lower rate from the George Banta Publishing Company, but without striking results. The manager, Mr. Peerenboom, explained that owing to local conditions the policy of his firm has not been identical with that of most printing houses. While some of the latter may offer lower prices now, they are likely to restore higher rates as soon as business conditions become normal, so that in the long run the Banta prices, maintained since 1922, will average better. Mr. Peerenboom recognizes, however, that the Association is entitled to its share in the reduction in cost of paper and will make corresponding allowances in the invoices.

One memoir (Leslie White, The Pueblo of San Felipe) is being financed by Dr. Elsie Clews Parsons. The galley proofs of the Anthropologist, no. 1, 1932, were returned for paging early in December.

The Memoir situation remains thoroughly unsatisfactory as more and more lengthy papers of genuine merit keep pouring in. The Editor has made a plea for a subsidy to a special committee of the National Academy of Sciences, but as yet has had no reply.

Volume 27, Number 1, which was out of print, was reproduced by the Beha photostatic process. If the Council approves the budget recommendation for con-

tinuing the reproduction of out-of-print numbers, we shall gradually build up a complete stock of our publications.

Though the appointment of associate editors seems to be discretionary with the Editor, in the absence of constitutional provisions for their election, the Editor would like to have official sanction, whether explicity or by tacit consent, for the addition of an associate editor. The number of strictly archaeological contributions offered to the Anthropologist is considerable and it seems highly desirable, especially in view of continued congestion of material, that a specialist in archaeology should regularly pass on their value. The Editor accordingly suggests, irrespective of whether he himself is re-elected, that Dr. Frank H. H. Roberts, Jr., of the Bureau of American Ethnology, who has expressed his willingness, be asked to serve as associate editor in charge of archaeological contributions.

Finally, the Editor once more expresses his appreciation of Associate Editor Gifford's invaluable services during the Editor's inevitably prolonged absence from Berkeley.

Respectfully submitted,
ROBERT H. LOWIE,
Editor

It was voted that the Editor's report be accepted. It was further voted that Dr. Frank H. H. Roberts, Jr., be elected an associate editor.

It was voted:

That the invitation of the International Congress of Prehistoric and Protohistoric Sciences to the American Anthropological Association to cooperate in the nomination of two members of the Permanent Council and two National Secretaries to represent the United States of America in the Congress be referred to the President and Secretary with power to act.

That the President appoint a committee of the American Anthropological Association on research.

That the Council recommend that the 1932 annual meeting of the American Anthropological Association be held at Atlantic City, and that the 1933 meeting be held, in accordance with the invitation of Dr. Shetrone, at Columbus, Ohio.

The President appointed the following Committee on Resolutions: Drs. Wissler, owie, and Mason.

ANNUAL MEETING, DECEMBER 29, 2:00 P.M.

The following officers, Council members, representatives to councils and associations, and new members of the American Anthropological Association* were submitted by the Nominating Committee (Drs. Hooton, Speck, Stirling, Linton) and were elected:

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* The names of the new members will be published in the complete membership list of the Association in our next issue.

President	John R. Swanton
First Vice-President	Warren King Moorehead
Second Vice-President	Wilson D. Wallis
Secretary	John M. Cooper
Treasurer	Edward W. Gifford
Editor	Robert H. Lowie
Associate Editors	Edward W. Gifford, Frank G. Speck, Frank H. H. Roberts, Jr.
Executive Committee	H. Irving Hallowell, H. Newell Wardle, Matthew W. Stirling.

Council

New Members: Harriett M. Allyn, Manuel Andrade, R. F. Barton, Wendell C. Bennett, Biren Bonnerjea, Charles Brown, Peter H. Buck, Douglas Byers, Emile Cailliet, William H. Claflin, W. B. Cline, C. H. Danforth, Ellsworth Faris, Reo Fortune, Lawrence Foster, E. A. Golomshtok, E. F. Greenman, W. D. Hambly, M. R. Harrington, L. Havemeyer, J. N. B. Hewitt, E. B. Howard, Charles R. Keyes, Berthold Laufer, Charles T. Loram, R. H. Lowie, Paul S. Martin, Robert McKennan, George P. Murdock, Paul H. Nesbitt, W. F. Ogburn, Frans M. Olbrechts, A. T. Olmstead, Henry B. Roberts, Carl Ruppert, J. T. Russell, Jr., Max Schrabisch, A. H. Schultz, D. Scott, Frank M. Setzler, William D. Strong, J. Eric Thompson, W. J. Wintemberg, George Woodbury (1935).

H. Bingham, L. Bloomfield, R. Bunzel, C. B. Cosgrove, D. S. Davidson, H. Field, E. W. Gifford, C. H. Hawes, M. Jacobs, D. Jenness, T. F. McIlwraith, J. A. Mason, M. Mead, C. B. Moore, W. K. Moorehead, N. C. Nelson, E. C. Parsons, E. K. Putnam, O. Ricketson, E. Sapir, M. H. Saville, H. I. Smith, G. C. Vaillant, H. Webster, A. E. White, L. A. White, C. C. Willoughby (1935).

C. Amsden, H. Beyer, P. A. Brannon, J. H. Breasted, K. M. Chapman, F. E. Clements, H. S. Colton, J. M. Cooper, T. Deuel, K. P. Emory, G. Engerrand, Lucy Freeland, Anna H. Gayton, M. R. Gilmore, H. S. Gladwin, Charlotte D. Gower, W. K. Gregory, S. J. Guernsey, C. E. Guthe, H. U. Hall, E. S. Handy, L. L. Hargrave, J. P. Harrington, C. L. Hay, M. Hellman, L. W. Jenkins, J. H. Kellogg, Isabel T. Kelly, A. V. Kidder, O. LaFarge, A. Lesser, E. M. Loeb, W. C. MacLeod, T. Michelson, E. H. Morris, C. B. Osgood, H. Powdermaker, W. A. Ritchie, F. H. H. Roberts, Jr., L. Schellbach, H. C. Shetrone, V. Stefannson, J. B. Stetson, Jr., T. W. Todd, W. L. Warner, G. Weltfish, G. D. Williams, F. R. Wulsin (1934).

R. B. Bean, Fay-Cooper Cole, H. B. Collins, Jr., B. Cummings, F. Densmore, A. C. L. Donohugh, S. Hagar, G. G. Heye, W. B. Hinsdale, E. A. Hooton, H. Kelley, H. W. Krieger, W. M. Krogman, S. K. Lothrop, R. C. Mackaye, W. C. McKern, Z. Nuttall, R. L. Olson, J. E. Pearce, R. Redfield, E. B. Renaud, H. L. Shapiro, F. G. Speck, L. Spier, Ellen Spinden, H. J. Spinden, F. Starr, J. R. Swanton, Ruth Sawtell Wallis, W. D. Wallis, H. N. Wardle (1933).

Margaret Ashley, S. A. Barrett, M. W. Beckwith, R. F. Benedict, C. W. Bishop, F. Blom, C. S. Coon, C. B. Davenport, V. J. Fewkes, E. S. Goldfrank, E. F. Greenman, G. B. Grinnell, E. Gunther, A. I. Hallowell, M. J. Herskovits, A. E. Jenks, N. M. Judd, R. Linton, J. C. McGregor, B. Oetteking, A. C. Parker, V. Petrullo, G. Reichard, Helen M. Roberts, J. H. Steward, M. W. Stirling, R. J. Terry (1932).

Past Presidents (ipso facto members of the Council): F. Boas, W. H. Holmes, R. B. Dixon, F. W. Hodge, A. L. Kroeber, C. Wissler, W. Hough, A. Hrdlicka, M. H. Saville, A. M. Tozzer, G. G. MacCurdy.

Representatives to Social Science Research Council: (In order to conform to the plan of the S.S.R.C. it is proposed to extend the term of each of our representatives so that tenure of office will cease December 31 instead of March 31): R. Linton (April 1, 1932) to December 31, 1932; A. M. Tozzer (April 1, 1933) to December 31, 1933; E. Sapir (April 1, 1934) to December 31, 1934.

Representatives to National Research Council: Clark Wissler, J. M. Cooper.

Representatives to Section H., A.A.A.S.: A. Hrdlička, T. W. Todd.

Representatives to American Council of Learned Societies: (In order to conform to the practice of electing representatives whose offices terminate in even years): A. V. Kidder (1931) to hold office until end of 1932; F. Boas (1933) to hold office until end of 1934; R. H. Lowie, alternate.

The Budget Committee, following the recommendations passed at the Council meeting of December 28, 1931, presented the following budget recommendations for 1932:

1. Secretary's expenses		$ 100
2. Editor's expenses		600
Editor's assistant	$ 480	
Office expenses	120	
3. Treasurer's expenses		540
Treasurer's assistant	$ 360	
Office expenses	100	
Membership charges	80	
4. *American Anthropologist*		4,460
Printing	$3,150	
Illustrations	640	
Reprints	400	
Distribution	200	
Storage of back numbers	60	
Insurance on stored publications	10	
5. Out-of-print publications		300
Purchase	$ 100	
Photostat reproductions	200	
Total		$6,000

It was voted that the budget as submitted by the Committee be accepted.

The following resolutions presented by the Resolutions Committee were adopted:

1

Resolved that the American Anthropological Association, in session at Andover, Massachusetts, December 28 and 29, 1931, express to the officers of Phillips Academy of Andover, and especially to Mr. Warren K. Moorehead, its sincere appreciation for the kind hospitality extended to the Association during this meeting.

2

Whereas Doctor George A. Dorsey was one of the founders and for many years an active member of the American Anthropological Association; whereas he took a prominent part in the organization of museums and in field research and himself contributed to ethnographic knowledge, especially of the Plains Indians; be it resolved that the American Anthropological Association give this expression of sorrow over his untimely death and extend to Mrs. Dorsey this message of sympathy.

3

Resolved that the American Anthropological Association, in session at Andover, Massachusetts, December 28 and 29, 1931, express to Dr. Franz Boas its sincere sympathy in his present illness and its hopes for his prompt recovery.

It was voted that the 1932 annual meeting of the Association be held at Atlantic City and that the 1933 meeting be held at Columbus Ohio. It was further voted that as regards the participation of the American Anthropological Association in the summer meeting or meetings in Chicago, 1933, the matter be referred to the Executive Committee with power to act.

PROGRAMME

MONDAY, DECEMBER 28TH

9:30 A.M.

FREDERICA DE LAGUNA, Archaeological exploration on Cook Inlet, Alaska

WM. DUNCAN STRONG, Recent archaeological research in Nebraska (Lantern)

HAROLD S. COLTON, How a volcanic eruption influenced the lives of an ancient Pueblo people (Lantern)

LYNDON L. HARGRAVE, Some results of study of Pueblo II in the San Francisco Mountain region, Arizona (Lantern)

CHARLES T. LORAM, An experiment in acculturation

BARBARA AITKEN, Two Indian accounts of the trouble at Oraibi in 1905–1906 (read by title)

LESLIE A. WHITE, The Pueblo of Sia, New Mexico

J. ALDEN MASON, Lintel 3 from Piedras Negras (Lantern)

LINTON SATTERTHWAITE, JR., The Eldridge R. Johnson Expedition of the Museum of the University of Pennsylvania to Piedras Negras

2:00 P.M.

ROBERT H. LOWIE, The prose style of the Crow Indians
RUTH M. UNDERHILL, Literary aspects of Papago songs
ALBERT MUNTSCH, Notes on the language and folklore of the Caribs of British Honduras
RICHARD THURNWALD, Some African institutions in process of change
GEORGE P. JACKSON, Old hymns hidden in Negro spirituals
ZORA NEALE HURSTON, African survivals in America (dance and religion)
GLADYS A. REICHARD, Some phases of art in Melanesia (Lantern)
DEAN S. FANSLER, Objectives in folk-lore research

6:30 P.M.

Annual Dinner of the AAA and AFLS

8:00 P.M.

VINCENT PETRULLO, In search of the primitive in Matto Grosso, Brazil: A motion picture cross-section of archeological and ethnological field studies conducted during 1931 under the auspices of the Museum of the University of Pennsylvania cooperating with the Matto Grosso Expedition

TUESDAY, DECEMBER 29TH

9:00 A.M.

EDWIN D. HARVEY, Shamanism in ancient and modern China
JOHN M. COOPER, The Northern Athapascan-Algonquian culture area
CORNELIUS B. OSGOOD, The culture of the Tanaina of Cook's Inlet, Alaska
H. SCUDDER MEKEEL, Teton-Dakota acculturation
EARL H. BELL, The results of an ethnographic approach to the study of changing family situations in a small Middle West community
ROLAND B. DIXON, Polynesian and American culture contacts
ALFRED M. TOZZER, Biology and biography
HELEN H. ROBERTS, Musical form in the songs of some Southern California Indians
GENE WELTFISH, Pima art style

2:00 P.M.

WARREN K. MOOREHEAD, An account of some experiments in the practical use of eoliths and Chellean tools
FORREST E. CLEMENTS, Some general aspects of the statistical method in ethnography
URSULA MCCONNEL, Recent research among some tribes of northeastern Australia (Lantern)
TRUMAN MICHELSON, Report on season's field-work

ALEXANDER LESSER, Cultural significance of the Ghost Dance

HORTENSE POWDERMAKER, Individualism in a Melanesian Society

AGNES C. L. DONOHUGH, (a) Ovimbundu leaf messages; (b) Examples of Angola folklore

FRANK G. SPECK, Notes on identities of Siouan tribal names in the Southeast (read by title)

7:30 P.M.

F. R. WULSIN, Excavations at Tureng Tepe, near Astarabad, Persia (read by title)

THEODORE MCCOWN, New discoveries in caves near Athlit, Palestine (Lantern)

VLADIMIR J. FEWKES, Harvard-Pennsylvania expedition to Yugoslavia (Lantern)

R. W. EHRICH, Pennsylvania-Harvard excavations in Czecho-Slovakia, season 1931 (Lantern)

BENJAMIN L. WHORF, Possible phonetic values of certain characters in Maya writing (Lantern)

JOHN M. COOPER, Secretary,
American Anthropological Association

BOOK REVIEWS

METHODS AND PRINCIPLES

The Age of the Gods. CHRISTOPHER DAWSON. (Houghton Mifflin Co., 1928. xx, 426 pp., 5 tables.)

This book attempts a picture of the growth of civilization in the Old World from Palaeolithic down to Classical times. It is, however, neither a text book nor a popular sketch. Concentrating attention on the fundamental developments in material culture and social life throughout this vast period, Dawson attempts to synthesize the religious attitudes characteristic of the major phases. That this task is apparently the real objective of the book is indicated by the title, but the subject is not approached abstractly. A clear and well balanced account of the prehistoric cultures of Europe and the Ancient East is attempted throughout, and the author is to be congratulated on his skilful and conscientious use of the archaeological material. Artifacts characteristic of different periods and regions, from laurel leaf blades and shoe-last celts to bell beakers and types of fibulae, are carefully described as occasion arises, so that the uninitiated reader is not, as so often, mystified by an allusive technology, and while the book is probably not intended as an introductory text book, it affords a good introduction to the early civilizations of the Old World. The discussion of religious life and spiritual culture is allowed to develop from direct consideration of the archaeological evidence, and while the religious emphasis has influenced the selection of material—a great deal of space is, for example, devoted to the religious organization of the Sumerian city states, and relatively little is said about the development of their arts and crafts—such topics as the growth of specialist crafts and the widening range of trade in the ancient world are adequately treated. In his discussion of warfare and the rise of warrior groups he makes considerable use of Perry's little known papers in the Proceedings of the Manchester Literary and Philosophical Society, 1917 and 1918.

Many points in the general thesis are open to criticism; the correlation of divinity types with various economies is probably too sweeping. The sky god as a product of hunter and pastoralist societies in contrast to the earth mother of the peasantry, fits ill with the suggestions of a female goddess cult in Palaeolithic times which Mr. Dawson himself emphasizes. The analysis of the fundamental social and religious elements in the theocratic "temple states" is suggestive and illuminating, but there is scarcely adequate ground for assuming it to be an almost inevitable development from the peasant cultures. One may in many areas more readily maintain that the peasant cultures were the products of diffusion into the outer world of the fundamental arts, crafts, and social ideas of the early cities of Babylonia, Egypt, and the Eastern Mediterranean.

Finally one regrets that the common ignorance or oversight of the true complexities of "simple cultures" could lead Mr. Dawson to append to his generalization that "the great stages of world culture are linked with changes in man's vision

of Reality" (page xx), the further comment, "The primitive condition of food-gathering and hunting peoples does not necessarily imply reasonable purpose or any reflective vision of Reality: consequently it does not imply civilization. The dawn of time civilization came only with the discovery of natural laws, or rather of the possibility of man's fruitful cooperation with the powers of nature as exemplified in agriculture." Would he really hold that the leaching of acorns in California, or the preparation of ipoh poison in Malaya, or the innumerable adaptive devices of Eskimo, are irrelevant to the "discovery of natural laws," or that the Plains Indians lacked "a reflective vision of Reality" in contradistinction to, e.g. Eastern Woodland tribes? The discussion of the relations of economic life and patterns of material culture to problems of religion and social outlook cannot be dismissed in this arbitrary fashion.

C. DARYLL FORDE

Cope: Master Naturalist. The Life and Letters of Edward Drinker Cope, with a Bibliography of his Writings classified by Subject. A study of the Pioneer and Foundation Periods of Vertebrate Palaeontology in America. HENRY FAIRFIELD OSBORN, with the Co-operation of HELEN ANN WARREN [and others]. Illustrated with Drawings, and Restorations by CHARLES R. KNIGHT under the Direction of Professor Cope. (Princeton University Press, Princeton N. J., 1931. London, Humphrey Milford, Oxford University Press. $5.00.)

Professor Osborn's impressive life of Cope is a general life story of this great dynamic naturalist in all the aspects of his many-sided career. It is well worth the perusal of any student of the natural sciences, especially of those connected with biology and geology, including mineralogy, with general and systematic zoology, ichthyology, herpetology (including batrachology), ornithology, mammalogy, paleontology, anthropology, and natural philosophy, in all of which Cope excelled, as in a few he ranks supreme. The biography utilizes the subject's remarkable letters, which make richly pleasant reading and throw many important sidelights on scientific subjects and situations.

In comparative anatomy, paleontology and phylogeny, underlying anthropology, Cope was superlatively able and energetic, sagacious, productive, and contributive. His interests were as wide as the skies, and included all continents and seas, all creatures and races. His personal experiences and human contacts, his psychological interests and interpretations, his travels and explorations, his dealings with American citizens, Europeans, Negroes, American Indians, among whom he was frequently an incidental visitor on the plains, his general reading and philosophical speculations, his interest in comparative ethnology in connection with the countries studied and their faunae, and his special interest in human and anthropoid anatomy, variability, phylogeny and evolution, in archaeology and prehistory, together with his special work in somatology, in osteology, craniology, comparative podology and odontology, connect him with our science. Space forbids a summary of his work, either in general or in the fields of anthropology and those adjacent; but a few words, somewhat casually chosen, may be added. He seems to have aligned himself not a

little with Topinard, regarding the problems with which they dealt in common. He wrote extensively on general, on mammalian, and specifically on human dentition, and with special reference to the tritubercular origin of molar teeth. He had been trained under Leidy in anthropotomy and was *par excellence* an anatomist. Anthropological data illustrate his discussion of evolution, throughout, as well as his treatment of educational and social questions, including marriage, suffrage, government, etc.

The Classified Bibliography, of 1395, titles lists eight titles in archaeology, thirty-three in the evolution of man (anthropogeny), and three in ethnology. Some of these were critiques or reviews—in which he was wont to extend his expressions and criticisms to psychology and sociology, philosophy and religion, psychiatry, politics and art. His writings of this kind usually were strikingly informed and sagacious. He published original remarks on ancient rock inscriptions in Ohio, stone circles in the Rocky Mountains, Indian kitchenmiddens, remains of an early population in New Mexico, skeletons or skulls found in various places in America, Australian skulls, Indian drawings of feet, fossil foot prints at Carson, Pliocene traces of man, man's antiquity, Aztec design, and—most notably—papers on *Anaptomorphus*, or the missing link, and the Lemurine (i.e. Eocene Lemuroid) ancestry of man —to which he adhered. Cope's ashes, skeleton and brain are in the custody of the Wistar Institute. The brain has been described by Spitzga.

Anthropologists will find this a useful compendium on Cope and a refreshing tale of scientific adventure in the actual terrains and the intellectual purlieus of some of their own labors and thoughts.

WM. HARPER DAVIS

An Hypothesis of Population Growth. EZRA BOWEN. (Columbia University Press, New York, $3.75.)

The formula developed in this book is succinctly stated as follows,

> Population size tends to vary directly with aggregate wealth, and inversely with the height of standards of living.

The formulation of this hypothesis, whose originality the author modestly but unconvincingly deprecates, is preceded by a review of the theories of Malthus, East, Pearl, and others, coupled with a superficial analysis of birth and death rates and general remarks on the "life struggle." Following the enunciation of this great principle the author or authors (for the first person plural is used throughout the book) push the conclusions on to prophesy. In all, seven of these revelations are deduced from the formula, but it will suffice here to cite only such comforting predictions as that the white "race" will survive, the world will never face starvation on account of over-propagation, the possibility of war will be reduced, and the biologic progress of humanity will be accelerated.

The basis of the reasoning employed in this book is nothing more than the old economic determinism. It is true the author states that his conclusions apply only to capitalistic societies, but other societies and other than economic factors are con-

veniently minimized. The seeker after philosophical scientific truth will be gratified by the largess of axioms and comments of an epistemological nature which have been generously scattered through the text.

FORREST E. CLEMENTS

Societal Evolution: A study of the Evolutionary Basis of the Science of Society. ALBERT GALLOWAY KELLER. (Revised ed., New York, Macmillan, 1931. ix, 419 pp. $2.50.)

This is a "revised" edition, but there appears to be no very fundamental revision. The thesis of the earlier book is repeated here, practically without change. That thesis is the amenability of society and social laws to the categories used in nineteenth century biology—adaptation, selection, counter-selection, variation, etc.

No type or types of social evolution are described, but rather types of social change. The author gives few long run trends but indicates many ephemeral modifications.

W. D. WALLIS

PHYSICAL ANTHROPOLOGY

Artificial Cranial Deformation. E. J. DINGWALL, (John Bale Sons & Danielsson, London, 1931. XVI, 313 pp., 55 pls., 5 maps. £3. 10s.)

The book at hand marks a substantial step forward in the study of one of the most widespread, peculiar and, so far as physical anthropology is concerned, noxious practices of man on his own body. It presents data on head deformation from all over the world, and contains much sensible discussion. Without exhausting the subject it covers the field so that it becomes at once the main work in this line.

In detail the author deals with artificial cranial deformation in Europe, Asia, Africa, Indonesia, New Guinea, Melanesia, Polynesia, New Zealand, Mexico, Central America and the West Indies, and amongst other American Indians. This is followed by a chapter of Observations and Conclusions. There are many historical references, exhaustive literature, and much detail as to the methods used by different peoples.

The conclusions are quite limited. On this score the author says:

> It may be thought that after such a lengthy and tedious discussion as that which is now brought to a close some more definite conclusions ought to be attained. If that be so then my readers may come to them by themselves. I have tried to present the facts fairly and have, I hope, given a representative selection of the literature, not excluding those authors on whose testimony I myself place little reliance. From this material they can draw any further information that they require. But I must be excused from making up their minds for them.

This can only mean that with all this great gathering of data the true original causes and meanings of these practices are still doubtful. They have in fact in the course of time been forgotten, to be replaced now, when inquiries press, by guesses or lame opinions of those who keep on these practices from inherited duty or as "the thing to do," but who have received no reliable tradition as to the reasons.

The book impresses one with the amount of involved labor. It will certainly be useful. But it should form a basis for a future still more systematized volume and one from which unreliable data were excluded. And there are a few other desiderata for the future edition: The maps should be more distinct; and a map of the world, showing in distinct colors the three main classes of deformation (fronto-occipital, circular, occipital) would be very helpful. Plate 38 involves an error; the skull it shows is not deformed. In various plates the reference leaves out the collector. The quotation from Otis (page 190) is incorrect; there was no artificial deformation of any sort in the Aleutians, or in any other part of Alaska save the Kodiak island (slight to moderate occipital compression). Not enough attention is given to the local individual variation of the methods and results. Some rather irrelevant matters are included, as for instance, on pages 163, 220–221, etc. The list of authors should be provided with page references. The subjects of chronology and introductions, of effects of the deformation on the child and of the consequences of the several types of deformation on the original form of the vault base and face of the skull, call for separate chapters And in general, more originality in observations would enhance the value of the volume.

In connection with the last item, the reviewer can not but wish that the deserving author may find it possible to avail himself of the enormous and highly instructive materials on cranial deformation now in the American collections, particularly that of Washington, where the numbers of deformed skulls reach into the thousands.

ALES HRDLICKA

EURASIA

Finno-Ugrian Volume. (Works of the Committee for the study of the ethnic contents of the U.S.S.R. and adjoining countries, volume 15, with an introduction by S. F. OLDENBURG. U.S.S.R. Academy of Sciences, Leningrad, 1928. 348 pp., 1 map. R. 3.50.)

The Finno-Ugrian section of the C.S.E.C. was formed in March, 1927, and an immediate decision arrived at to survey the achievements of Russian scientists among the Finno-Ugrian tribes in the U.S.S.R. and adjacent countries in the fields of physical anthropology, ethnography, linguistics, archaeology, and history. The result is this volume. It contains six separate surveys, each with an adequate bibliography. They comprise a summary of the Russian work in physical anthropology on the Finno-Ugrian population, by D. A. Zolotarev; an ethnographical study of the Finno-Ugrians, by N. N. Poppe; a survey of Finnish linguistics, by D. V. Bubrich; archaeological investigations in the northern part of the U.S.S.R., by A. V. Schmidt; historical investigation of the Finno-Ugrian population, by A. I. Ardreev; and a map of the distribution of the Finno-Ugrian tribes, by D. A. Zolotarev.

A more or less detailed history of each investigation is given, segregating, where possible, permanent contributions from tentative conclusions. Especially impressive is the history of archealogical investigation. The author defined the territory of his survey, the "north" of Russia, as the forest region lying north of a line drawn from

Mogilev through Voronej to Saratov, bordered on the west by the region of Lithuanian influence, and limited on the east by a line spanning the Urals and embracing the Tobol region. Thus including as it does the larger part of European Russia and a great part of Siberia, the survey is an important contribution to the study of Russian archaeology.

Although, as Oldenburg points out, in no branch of the study was completely systematic work possible, and both the character and the quality of the surveys vary, the mass of material collected is truly impressive. One welcomes this taking of stock as of great importance. Its necessity was accentuated by the fact that the great majority of Russian sources are inaccessible to European scholars; that, for example, Russian archaeology is a terra incognita even to specialists.

Revision of methodology and a growing consciousness of the futility of political borders in the realms of science account for this attempt on the part of Russians to correlate their work with that of Western Europe and to foster the latter's realization of the importance of coordinating their conclusions with the factual material of a territory which comprises one-sixth of the earth's surface.

EUGENE GOLOMSHTOK

The distribution of Samoyeds in the past. I. M. KALININ. (Izvestia of the Russian Geographical Society, vol. 61, no. 1, 1929.)

This article deals with the distribution of Samoyeds in the second part of the twelfth century. From Russian archives it is evident that the Samoyeds, now occupying the eastern part of the Archangelsk Government between the Mezen river and the Ural mountains, at one time commanded a territory reaching as far south as the shores of Lake Onega, and that later they were pushed north by the aggressive Russian colonists.

EUGENE GOLOMSHTOK

The Island Formosa or Taiwan. MME. W. D. POSDNEEVA. (Izvestia of the Russian Geographical Society, vol. 61, no. 2, 1929.)

The author presents a brief outline of economical conditions in Formosa based on Japanese sources and information obtained at the Formosa Exhibition in Tokio. The population of Taiwan (Japanese for Formosa) is described, with a short sketch of Japanese politics and the uprising of Keiran (the Nakka group) against the Japanese in 1912–1913. Some references are made to the life and customs of the primitive head hunters and to the harsh measures of the Japanese for their subjugation.

In conclusion the author, regarding the island from the Marxian point of view, states her belief in the ultimate progress of Formosa in trade, industry and transportation, and foresees the transformation of the agricultural society into an industrial one.

EUGENE GOLOMSHTOK

Classification of folklore types in accordance with the system of Antti Aarne. N. R. ANDREEV. (Russian Geographical Society, Department of Ethnography, Committee on Folklore.)

The author applies the system and some of the material of Antti Aarne (Verzeichnis der Märchentypen, Helsinki, 1911, Folklore Fellows Communication, No. 3) to the Russian folktale material, dividing it into six major categories and indicating 2140 types as present.

EUGENE GOLOMSHTOK

Folk Tales of 'Iraq. Set down and Translated from th e vernacular by E. S. STEVENS (London, Oxford University Press, 1931. xxiv, 303 pp., 16 pls.)

This collection of 'Iraqi folklore presents to the widely reading public a new field of interest and enjoyment. To those of us who were brought up on Lang's polychrome series of fairy books and on Grimm it recalls pleasant and thrilling hours. Old and familiar motifs are present but recombined or re-expressed in a manner characteristically Arab.

The translatress deserves much credit for the felicitous manner in which the tales are presented. One feels that they are more than mere translations of texts, yet the conciseness of the originals has been retained without sacrificing the manner or the spirit in which they were told. All these stories are current today in Bagdad, Mosul and nothern Mesopotamia, known alike by all classes of society. However, the professional story-teller is disappearing, and with him or her go the accompanying patterns and, inevitably, much of the subject matter. In consequence, the timeliness of this work need not be dwelt upon.

The student of folklore and mythology will find this volume an interesting addition in that it provides material from a little known area, filling in a gap that lay between Anatolia, Armenia, Persia and Palestine, areas from which there is already some published material. No attempt has been made to group these tales in categories on the basis of either form or motif. Their composite character is perfectly apparent and is expectable, coming as they do from a region where culture is very old and the changes in races and languages many. The section of comparative notes appended at the end of the book more than compensates for the apparent lack of organization of the text. Brief but conscientious, it provides the student with most of the necessary clues for further study.

The plates interleaved with the text provide a sympathetic background for the stories that very greatly enhances the whole. Some of them are extraordinarily fine and true to life. The pictures of Bedu and Bedu customs are excellent.

It is to be hoped that the author will be encouraged to pursue her researches and present a similar collection from southern 'Iraq and also a comprehensive comparative treatment of the folklore of this focal area.

T. D. MCCOWN

OCEANIA

Samoan Material Culture. TE RANGI HIROA (P. H. BUCK). (Bernice P. Bishop Museum Bulletin 75. Honolulu, Hawaii, published by the Museum, 1930. 724 pp., LVI pls., 338 figs.)

Works upon material culture have the unfortunate tendency of being readable in inverse ratio to their actual value as careful, detailed records of techniques. Dr. Buck's work, as demonstrated also by his earlier publications, is a happy exception to this rule. He has the delightful faculty of combining the most meticulous, the most painstaking and yet always lucid description of the minutiae of material and technique, with a running comment upon the social implications, the ceremonial aspects, often even the psychological significance of the objects he is describing. The Polynesian student interested primarily in custom rather than in material culture can not afford to neglect this work which contains many new items of ceremonial usage in Samoa. (Dr. Buck takes for granted a rather detailed knowledge of Samoan social organization; to understand the full implications of his social comment it will be necessary to consult other works on Samoa first.) To the student of material culture in the Pacific, and as a model upon which students of material culture everywhere can well form their style, the book is invaluable.

All of Dr. Buck's work has emphasized the importance of an understanding of the actual steps in, and manner of, manufacture, if the finished form of an object is to be rightly understood. Perhaps the greatest theoretical contribution of this study is a continual insistence, sometimes verbal, sometimes merely implicit in the nicety with which Dr. Buck records details, that a comparison of end forms of which the method of manufacture is unknown is an idle and profitless undertaking. He is equally critical of those functional interpretations of form which disregard a knowledge of method, as in his explanation of the slant join in the Samoan house rafter (pages 55–56) as the result of exigencies of a stage of construction, and not some elaborate rationale of the nature of the arch, which a careful analysis of the Samoan house shows is not supported on the basis of these so plausible joins at all.

Concerning the full and delightful ceremonial notes which accompany each section of the study a few words of warning must be given. Although Dr. Buck is fully cognizant of the many differences between villages and between parts of Samoa in ceremonial, he does not always acknowledge this fact in his discussion of special ceremonies. As a result many statements have the appearance of absolute dicta upon Samoan usage, when actually they apply to the usage of one village or one island only. This should be borne in mind; in most cases Dr. Buck's observations upon specific points of ritual should be added to the various observations already recorded, as presenting still other variants of ceremonial. Examples of such treatment are his statement as if the oven were made every day (page 137), the statement that the kava is "always served the longest way round" (page 154), which is certainly not true of the most important kava ceremonials in Manu'a, and the statement that a person without a post could not enter the house except with the status of a

dependent (page 97). In Manu'a there is a definite *matai* status known as *vaipo*, "one who sits between the posts."[1]

Dr. Buck discusses material culture in a context peculiarly Polynesian, that is, in a ceremonial rather than an economic context. This choice does not, however, skew the facts except in one instance. Concentration upon the ceremonial significance of material objects has obscured the very important question of provenience. According to casual information which I received, practically all kava bowls were made in Savai'i, the shaggy mats were made only in Ofu of American Samoa and in Western Samoa; red feathers were exceedingly rare in Eastern Samoa and had dropped out as an item in the *oloa* part of the affinal exchanges. Dr. Buck remarks on page 470 that fish nets were made by the inland villages, but furnishes no details of the method of trade. Where so many of the Samoan industries were village-contained, it would be of interest to know just how much localization of manufacture did occur. Less important omissions are the rather uneven identifications of plants and fish. Where the Samoan name only is given, work for the comparative student is enormously increased. I have noted only one omission of historical significance, and that is the communal *ti*-oven which is only made in times of famine. This is called the *Umu-Ti*, as in Tahiti, and certain very slight features,—the dress of the *manaia* as he rides upon the lever which opens the oven, etc.,—connect it with the firewalking of Fiji and Tahiti. The fact that, in a non-famine year, Dr. Buck obtained no account of this institution makes it more possible that an account of it may still be reported for Tonga.

Historical students will be most interested in the brief and trenchant summary of the historical relationships of Samoan material culture. This is, I believe, the most convincing statement of the errors involved in comparing museum material or the mere record of the existence of an object, use unknown, which has yet been presented. Not only should Linton's preliminary analysis of different Polynesian cultural affiliations[2] and Clements, Schenck and Brown's article[3] based on Linton's material, be reread in the light of Dr. Buck's precise criticisms, but all comparative work of the Graebnerian type should be submitted to the same type of scrutiny.

In closing, I should like to remark how fortunate is the Polynesian student who can hope to base his conclusions from an analysis of custom upon so firm and complete a base as Dr. Buck's studies of material culture.

MARGARET MEAD

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[1] In fairness to both Dr. Buck and myself it should be noted that although our two manuscripts upon Samoa appeared almost simultaneously, owing to the exigencies of field work there was no opportunity for any work of comparison or collation.

[2] Linton, R. The material culture of the Marquesas. Bishop Museum Mem. vol. 8, no. 5, 1923.

[3] Clements, Forrest E., Sara M. Schenck, *and* T. K. Brown. A new objective method for showing special relationships. AA 28: 285–604.

NORTH AMERICA

Der Heilbringer. A. VAN DEURSEN. (J. B. Wolters, Groningen, 1931. 395 pp.)

This is a study of "messiahs" among American Indians north of Mexico and is chiefly valuable for its wealth of illustrative ethnographic data bearing on shamanism, religion, and magic. The material is classified by tribes and area, which greatly facilitates use of the book as a reference source. The last part of the work is devoted to an analysis of types of holy persons and a tabulation of the distribution of these types. The author has little to say about the relative age of the different idea-complexes and makes no attempt to tie up with pan-diffusionistic doctrines. Der Heilbringer is a well documented, sober piece of work and should be valuable to those interested in primitive religion.

FORREST E. CLEMENTS

AFRICA

Chaka. An Historical Romance. THOMAS MOFOLO. With an introduction by SIR HENRY NEWBOLT. (Published for the International Institute of African Languages and Cultures by Oxford University Press, London, 1931. 200 pp. 7s 6d.)

The publication of this story is but one of many examples of the literary activity of the International Institute of African Languages and Cultures; one is glad to note that a number of books bearing on African ethnology, linguistics, and folklore is actually issued or is in preparation. These proposed Studies of African Life and Institutions will no doubt maintain the high standard of the journal, Africa, for each work is to be prepared by a specialist, and due importance is attached to the necessity for publishing in English, French, and German, so maintaining the international character of the Institute.

At the outset the reader is given a brief background of the history of the author Thomas Mofolo, an introduction which supplemented by Dr. Alice Werner's notes on pronunciation of proper names provides an intelligible and helpful beginning. During early youth Mofolo was employed in pastoral pursuits among his kinsmen the Basuto, but fortunately he came into contact with a mission school where his talents were developed, so that in later life he was able to write Chaka and other books in Sesuto, his native language. The translation from Sesuto to English was undertaken by Mr. F. H. Dutton and Mr. W. R. Maude, who are to be congratulated on their preservation of graceful simplicity and at times a quaintness of expression that characterized the original manuscript.

Before pointing out its scientific value it is well to say that the book has a charm for any reader, even if he have no ethnological interests, who appreciates a story. It is, however, more than a tale to pass the time, for as a whole the narrative amounts to a behavioristic study of Zulu life under the despot Chaka. Modern psychological study has been concerned with examination of leadership and the factors of personal ascendency in social groups with a view to ascertaining the social conditions and personal qualities that act reciprocally to produce the great men of history. Students of psychology who are acquainted with Professor Kimball Young's Source Book for Social Psychology will find material in Chapter XX that might

be profitably used in conjunction with the data supplied by Mofolo respecting the rise, the acme of power, and the downfall of Chaka.

In the earliest pages the reader, if ethnologically inclined, will at once be arrested by statements made quite casually in the course of the story. Almost immediately contact is made with witchcraft, medicine-men, and beliefs in a return of reincarnated spirits in the form of snakes. In early childhood Chaka was rubbed with medicine that caused his triumph over boys who had maltreated him. Natural history is not neglected, and for the ethnologist there is interest in beliefs connected with lions and hyenas.

Mofolo touches a point of ethnological importance on which further information is desirable when he says that

> In Kaffirland an unmarried girl who bore a child was put to death, and her boy and girl companions were put to death as well, that is to say all who slept in the same huts. It was said that the whole group must have known of her act when she committed it, and that they would corrupt the tribe and the younger generation by teaching them bad habits.

Such a system of boy and girl friendships is prevalent among the Ovimbundu of Angola, and though the young people may sleep together at the house of one of the girls, virginity is esteemed and premarital pregnancy is a disgrace. A husband who proves that his bride is not a virgin bores a hole in her cloth with a brand from the hearth. He makes her take the garment to her parents, who return a portion of the presents given to them. E. Torday examined the evidence for these boy and girl friendships (The Principles of Bantu Marriage in Africa, Africa, 2: 256, 1929.). He notes the contradiction of ideas involved in permission of nocturnal intimacies and a demand for preservation of virginity.

The character of Noliwe, sister of Dingiswayo, is charmingly described, and an interesting custom relating to exchange of beads as a token of betrothal is noted.

> They did not say anything but they exchanged their beads; Chaka gave his to Noliwe, and she gave him hers.

Of Chaka's dealings with witchcraft to give him power, and of the fortifying of warriors with strong medicines, Mofolo has much to say, and all is perfectly sound ethnological fact skilfully woven into the thread of the story. On page 125 one seems to touch the core of ancestor worship when Chaka is required to provide blood for medicines that will establish his power. The witch doctor says "Today, Chaka, we are teaching thee the highest kind of witchcraft, when men kill their children or their parents so that the spirits may receive them and prosper them." The implied idea is that for success on earth the aid of powerful ancestral spirits is necessary. The psychology of dreams in African life, though discussed by Seligman, Rattray, Gutmann and others, has not been the subject of extensive study. The dreams of Chaka (page 194) give some new material for the study of oneiromancy.

Every book with merit has some definite purpose to fulfil, and if I were a teacher this little book would be recommended to my junior students of South African history and ethnology as a palatable introduction to the more technical and substantial works of A. T. Bryant (Olden Times in Zululand and Natal) and J. H. Soga (The South Eastern Bantu).

WILFRID DYSON HAMBLY

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DISCUSSION AND CORRESPONDENCE

Choctaw Moieties

Our information regarding these two ancient and long obsolete divisions of the Choctaw Indians is so scanty that any new light upon them is most welcome. In my recently published bulletin entitled "Source Material for the Social and Ceremonial Life of the Choctaw Indians," pages 76 to 79, I assembled all of the data known to me when it was compiled. Quite recently, however, Prof. A. G. Sanders, who is editing for publication material contained in the Mississippi State Department of Archives and History at Jackson, has brought to my attention a brief mention of them which throws some important additional light upon their organization and position. This is in a letter by the *ordonnateur Salmon*, dated Feb. 8, 1733. In reporting an estimate of Choctaw warriors furnished him by the Jesuit missionary Beaudouin, he says:

> il pretend que son Calcul est juste sur le fondement que tous les Tchactas sortent de deux races principalles, Sçavoir des Inoulakta qui est la plus nombreuse et la plus noble et des Eukatatlapé, qui est moins Considerable et moins distinguée. il dit, que la premiere race est partagée en sept classes differentes et la seconde en cinq ce qui forme douze partis differents et quayant consulté des hommes de ces differentes races, chacun en particulier luy a dit a peu pres le nombre d'hommes portant armes de sa Race, et que ce n'est que par ce moyen qu'il a pu en faire le denombrement; il ajoute que chacune de ces races a un chef particulier . . . .

The alleged social inferiority of the Eukatatlapé seems to be confirmed by this word itself which is used by no other writer known to me. It consists of yuka, captive, prisoner, slave, and tathlapi, five, the whole meaning apparently "the five captive, or slave groups." By other writers this is called the Imoklasha, "their own people," or "friends," or the Kashapa okla, "divided people." From the wording in another early letter it seems that it was the official Peace party among the Choctaw, the Iⁿholahta being the War party. The apparent emphasis here placed on slavery and war jars rather rudely with the seeming internal unity of the Choctaw in historic times and their reputation as lovers of peace, and it is possible that the terms employed were ceremonial and had no reference to the origin of the groups called inferior. Moreover, the Shakchi humma okla, "red crawfish people," who probably represented an incorporated tribe, belonged to the Iⁿholahta who are supposed to have been superior. The alleged inequality in numbers between the moieties may mean that in Beaudouin's time they were not altogether exogamous. The assertion that each moiety had a head chief also stands by itself.

John R. Swanton

Some Algonquian Kinship Terms[1]

The terms for "sister's daughter" (male speaker), and "brother's daughter" (female speaker) among various Algonquian languages present a difficult phonetic

[1] Printed by courtesy of the Smithsonian Institution.

problem, though apparently two recent writers, Sapir[2] and Hallowell[3] have not noticed this; and a third, Bloomfield,[4] very properly (as I shall show below) makes no provision for it in his scheme of Central Algonquian phonetics, but does not discuss the difficulty at all. My sole excuse for bringing the matter up in the AMERICAN ANTHROPOLOGIST, rather than a journal devoted purely to linguistics, is that an ethnological as well as a linguistic fact is at stake.

To come to the point at once. There is no single Algonquian archetype that will satisfy the requirements of Cree nistim, Menomini ne'nɛmɛh, Fox ne'cemi'sA, ne'cemī'A, Cheyenne na'ha'mᵉ (other languages will be considered below). An archetype ne'θem- will account for the Cree, Menomini, and Cheyenne forms, but not for Fox ne'cemi'sA, ne'cemī'A. Therefore it is impossible to set up a single archetype for "niece," and "daugher-in-law" as Sapir (loc. cit.) has done. Now ne'θem- has an exact phonetic equivalent in Fox ne'semyA "my daughter-in-law." Insofar as Ojibwa, and a number of other languages back Fox 'c [not 's] in the term for "my niece," I believe we are justified in assuming that in Cree, Menomini, and Cheyenne the original terms have been replaced. Acceptance of the equation with the Fox word for "my daughter-in-law" is indicated by the fact that in Cree nistim means "my daughter-in-law" as well as "my niece." It is obvious that cross-cousin marriage with such a terminology is favored: which is not uninteresting in view of Hallowell's recent speculations, but I hasten to state that among the Cheyenne, at least, such a type of marriage is taboo. In this connection I must state that André's nissim (Algonquin) "belle fille, bru, fille de ma soeur, etc." cited by Hallowell is not worth a fig in view of the fact that Cuoq and Lemoine give terms corresponding to both Fox ne'cemī'A and ne'semyA. It is not a matter of "minor differences in orthography" as Hallowell thinks: it is a true phonetic difference; André's nissim in the sense of "fille de ma soeur" is simply a mishearing: Proto-Algonquian 'θ and c are kept rigorously apart in Algonquin (and Proto-Algonquian s does not fall together with c). Very obviously this has a direct bearing on Hallowell's line of argumentation.[5]

Turning now to Central Algonquian languages backing Fox 'c in ne'cemi'sA, ne'cemī'A, I can cite offhand Sauk, Kickapoo, Ojibwa, Ottawa, Potawatomi, Algonquin, Shawnee, Miami, Peoria. Natick kushim, "thy daughter-in-law," is not decisive, one way or the other: Proto-Algonquian 'θ and c alike become sh. And since 'θ and c both appear as s(z) in Eastern Algonquian (though '1 apparently remains, thus tending to show some etymologies given with Proto-Algonquian 'θ really have '1) such equations as Penobscot nsam, "my daughter-in-law," Malecite nəzəm, Abnaki and Micmac nsəm, "my niece," (all cited by Sapir[6]) are not surprising, for

[2] SAP-J 15:53, 53, 1928.

[3] ICA 33:541–543, 1930.

[4] Language 1:130–156, 1925.

[5] *Loc. cit.*

[6] Sapir's forms do not quite agree with those given by Speck, AA 18:143–161; the deviations do not affect the point at issue. The Penobscot term given by Speck for "cross-niece" has the same stem as "daughter-in-law," but has a diminutive suffix.

the different Proto-Algonquian stems underlying Fox ne'cemī'A (ne'cemi'sA) and ne'semyA [similarly the Algonquin correspondents: see above; also Ojibwa, Ottawa, Kickapoo, Shawnee] would necessarily fall together in these languages: full schedules presumably would bring this out, for according to Morgan's schedules the Malecite word also means "my daughter-in-law." This well illustrates the pitfalls into which one may fall in attempting to deduce social conditions from kinship terms without a full knowledge of the linguistic facts.

In this connection, it is proper to point out that the Cheyenne word given by Morgan for "my sister's daughter" (male speaker) as a matter of fact is not Cheyenne, but Central Algonquian; the error was undoubtedly introduced in the following way, namely, Morgan's informant, Joseph Tesson (whose son [Joseph] and whose grandson [Joseph] I knew intimately) was a Central Algonquian whose associations were rather varied, and thus it is that the word was introduced. (Incidentally it is not Menomini.)

It may be well to briefly discuss the Cheyenne word for "my daughter-in-law." The same word means also "my son-in-law," and also "my grandchild." There is no possible doubt but that historically "my grandchild" was the primary meaning as is shown by the evidence of other Algonquian languages. This can be explained on a purely linguistic basis without resorting to complex sociological deductions: in Cheyenne a single word means "my grandfather" as well as "my father-in-law;" a single word means "my grandmother," as well as "my mother-in-law;" as is known, there are abundant parallels in other Algonquian languages. Nothing is simpler than to assume that the word for "my grandchild" has replaced the terms for "my son-in-law" and "my daughter-in-law" in order to match "my father-in-law, my grandfather" and "my mother-in-law, my grandmother."

TRUMAN MICHELSON

THE REASON FOR THE DEPARTURE OF THE PECOS INDIANS FOR JEMEZ PUEBLO

The writer spent the summer months of 1929 and 1930 collecting songs in the Rio Grande pueblos and by the second season had made considerable progress in cementing real friendship with a number of Indian families, particularly at San Ildefonso. These families were invited one by one to spend the day socially at my camp the second season, having dinner there. No attempt was made to secure any data on these occasions, but conversation flowed quite naturally. At different times during the season I had been obliged to change base to the neighborhood of Pecos for some special work, and mention was made of the impending trip. Ignacio Aguilar, a San Ildefonso Indian about seventy years old, was the senior member of a family being entertained and a warm friend whose confidence had extended to taking me, unrequested, to see his private prayer shrines and permitting himself to be photographed in full *koṣare* regalia on the occasion of a corn dance. This guest asked if I had ever seen the ruin of the big town there, to which I replied that I had been there many times. Did I know why the Pecos Indians had left their village to go and live at Jemez? I said, "No; what was it?" not giving the explanation current among white men that their decimated number owing to epidemics of illness was supposed

to have made the pitiful remainder feel so insecure that they had united with the Jemez. The following story was then related, adding another bit of evidence to several vague reports of snake worship at Pecos.

Ignacio's grandfather had told him the incident, of which he had been a witness. The old man had relatives in Cicuye or Pecos and had visited there often in the days when the pueblo was inhabited. The Cicuye Indians had a snake god which they kept in a kiva and which enabled them to obtain all of the things they asked for. In return for these favors the hunters went every day to procure fresh meat for it. The snake was very hungry and required much meat. It was just after a war, and the kiva men were very busy, or perhaps for some other reason they did not feed the snake god. The snake called for food, but they paid no attention to him. Finally he became angry, so he told the kiva men, "Since you will give me no food, I cannot stay and help the people any longer. I must go away from here." The kiva men still paid no attention to the snake, so when they were all asleep, he left the kiva and started down the arroyo. He was so huge that he left a track like a small arroyo.

Ignacio's grandfather and a party of San Ildefonso Indians were hunting down by Galisteo. They were surprised to see two Cicuye Indians coming down the river. They wore almost no clothes but were clad only with loin cloths as when hunting, and seemed very excited. So some of the San Ildefonso Indians went to ask them what was the matter. The Cicuye Indians asked them if they had seen this snake god, but the San Ildefonso Indians had not. The Cicuye Indians told them, "It is well that you did not, for he might have bitten you. We have tracked him this far, but we cannot find him."

The two from Cicuye went on down the valley, following the snake's track as far as Domingo. There the snake had gone into the water and disappeared. They could find no more track on either side of the river. When they returned to their pueblo without having found the snake god, all the people said, "There is no use of our staying here because no more good can come to the Pueblo with our snake god gone." So they moved and went to live with the people of Jemez. The people of Galisteo were relatives of those of Cicuye and had been accustomed to come there to ask favors of the snake god. They too felt that disaster had befallen their pueblo with its departure from Cicuye, and being friends of the people of Domingo, went to live with them there and deserted their own home.

HELEN H. ROBERTS

ANTHROPOLOGICAL NOTES AND NEWS

DR. THOMAS RUSSELL GARTH, professor of educational psychology at the University of Denver, spoke at the convention of the American Association for the Advancement of Science, December 28-January 31, on recent investigations made by him and student assistants on American Indian psychology compared with that of whites. The studies were made on Indian reservations and colonies in Colorado, Utah and New Mexico.

ON FRIDAY, November 27, Dr. E. B. Renaud, Professor of Anthropology, University of Denver, addressed the Annual Meeting of the Colorado-Wyoming Academy of Science, at Greeley, on "Some Wyoming Pictographs." His address was illustrated with 14 plates representing the most important pictographs found last summer by the Denver-Wyoming expedition fostered by the University of Denver and the University of Wyoming for the Archaeological Survey of Eastern Wyoming.

Historic petroglyphs were seen in the Sand Creek District, south of Laramie. Red painted pictographs were found in a cave near Douglas. But the most extraordinary discovery was that of incised and painted shields in Central Wyoming, twenty-three miles south of Moneta, a small town seventy-nine miles west of Casper in a country of difficult aspect. Under the guidance of Mr. David Love of Wyoming University, and with the assistance of Mr. Jean Dubois of Denver, Dr. Renaud copied, photographed, and measured many of those strange pictures of prehistoric Indian times. They are circles with engraved and colored figures of turtles, vultures, wild turkeys, snakes, rodents, antelope, sun and moon, masks, and conventional signs. The colors employed are unusual, being green, purplish-red and orange.

Other incised petroglyphs represent warriors with shields and spears, pointed and square shouldered men and women, bison, elk, strange animals, and a variety of masks and conventional signs. Nowhere are there figures of the horse or other evidence of contact with white men, nor has any been found in the neighboring camps, this bespeaking real antiquity. It is the first time in many years of exploration that colored shields of this kind have been seen,— hence the special interest of the find for archaeology and primitive art. The marshaling of the figures on these shields recalls European heraldry.

THE STUDY OF PIGMENTATION is being brought to a degree of exactness at the department of anthropology of Denver University which should make it serviceable to physician, pathologist, and specialist in this direction, and for the detection of immigration impostors and ordinary criminals. Miss Charlotte Morell, assistant to Dr. E. B. Renaud, anthropologist and archaeologist of the University, has spent two years in research in this line, with striking results. She has made a skin-pigment analysis on hundreds of students, and, as with fingerprints, nature has been selective. No two skin colors are exactly alike.

The terms "blond" and "brunette" alone are not satisfactory; there must be terms for variations. Miss Morell employs four primary colors—black, white, yel-

low, and red. The "Davenport disc" is used in color measurements. It is very exact. Before taking the examinations ladies must be rid of cosmetics, including lipstick effects.

Pigmentation varies with sex, seasons, age, race, and physical and psychical conditions. Ultra-violet rays from the sun have a marked influence on pigmentation. Races can be subdivided, and it need no longer be simply a case of white or black, red or brown. Actually there are no such arbitrary distinctions. The delicate instrument in the hand of an expert can differentiate and make unusual diagnoses.

The Wellcome Gold Medal

The President has received from Dr. Henry S. Wellcome the following generous offer of a Gold Medal for an Anthropological Research Essay.

To the President,
Royal Anthropological Institute.

54, Wigmore Street,
Cavendish Square,
London, W.1.

Dear Mr. President,

I have very great pleasure in confirming my offer to found a gold medal to be awarded annually by the Royal Anthropological Institute for the best anthropological research essay, subject to the conditions governing the award, which have been agreed to by your Council and myself, a signed copy of which I attach herewith.

I am therefore making the necessary arrangements so that the first award of the medal can be made in 1932.

I am, yours truly,
Henry S. Wellcome.

The Wellcome Medal

1. There shall be a Medal known as the Wellcome Gold Medal for Anthropological Research.

2. The Medal shall be awarded annually, subject to conditions hereinafter provided, for the best research essay on the application of anthropological methods to the problems of native peoples, particularly those arising from intercourse between native peoples, or between primitive natives and civilized races.

3. The Medal shall be awarded by the Royal Anthropological Institute on the recommendation of a Medal Committee to be constituted as hereinafter provided.

4. The Medal Committee shall consist of the President of the Royal Anthropological Institute for the time being as chairman, the Conservator of the Wellcome Historical Medical Museum for the time being, and three members to be nominated respectively, for a period of three years, by the Presidents of the Royal Anthropological Institute, the Royal Empire Society and the African Society.

5. The Medal shall be open to competition among all nationalities, and shall be announced at least once annually in the publications of the Royal Anthropological Institute, the Royal Empire Society and the African Society.

6. The essays must be of moderate length. They must be submitted in English, in triplicate copies, at the office of the Royal Anthropological Institute on or before the first day of January of the year in which they are to be considered by the Committee.

7. The Medals will be awarded at the annual meetings of the Royal Anthropological Institute.

8. The Medal Committee may appoint on any occasion a referee or referees, but no award shall be made except on the recommendation of the Medal Committee to the Council of the Royal Anthropological Institute.

9. Provided, in any year, no essay shall have been submitted which in the opinion of the Medal Committee attains such a standard as to justify the award of the Medal, no award shall be made.

10. Any person to whom a Medal has not been already awarded, may submit an essay for competition in any subsequent year.

11. Every essay for which a Medal has been awarded shall, if unpublished, be submitted for publication by the Royal Anthropological Institute unless otherwise decided by the Medal Committee.

Agreed. HENRY S. WELLCOME

The Fellows of the Institute will join heartily with the President and Council in expressing their gratitude to Dr. Wellcome for this munificient encouragement to anthropological research. [*Reprinted from* MAN, 1931, 271.]

JOSEPH BAYER, director of the division of Anthropology and Prehistory in the State Museum of Natural History in Vienna, and editor of the journal "Eiszeit" is reported to have died.

AT THE ANNUAL MEETING of the Board of Trustees of the American School of Prehistoric research, held at Andover, Mass., December 28, 1391, Dr. George Grant MacCurdy of Yale University was reelected Director.